

Measurement Rules

RG-65 CLASS



2014

MEASUREMENT RULES RG-65 CLASS

The "RG-65" is a Radio Controlled monohull development class, where all is allowed except what is specifically prohibited by these rules of measurement.

MEASUREMENT RULES

1 GENERAL

1.1 Purpose of the measurement

1.1.1 It is intention of these Rules to give ample freedom to design and build R/C sailing racing models whose length will be of 65 +/- 0,5 cm, with an rig height of up to 110 cm and a maximum sail area of 2250 cm².

1.1.2 The Class "RG-65" is a Development Class, therefore everything that isn't prohibited in these Rules is permitted.

1.2 Measuring Units

1.2.1 All dimensions will be measured in centimeters, with an accuracy of 1 (one) decimal (that is equivalent measuring in millimeters), and the final result of calculations of surface will be rounded to the nearest cm².

1.2.2 Maximums and minimums are absolute values, without tolerance.

1.3 Graphic description

Appendices 1, 2, 3, 4, 5 and 6 are an inseparable part of these Rules and describe them graphically.

2 ADMINISTRATION

In accordance with the Standards of the RG65- ICA.

3 HULL

3.1 General

The "RG-65" will be a monohull.

3.2 Hull

3.2.1 In each section of the hull, there will be no point of underwater body below 0.3 cm another point of the same section located closer to the centre line of the hull.

3.2.2 On the bow and from the deck, there will be a fender protecting, with a length of 0.5 +/- 0.1 cm by 0.3 cm of width at least, of elastomeric material (flexible gum, elastic foam, etc) (see appendice 5)

4 KEEL, BALLAST and RUDDER

4.1 Keel

The keel will have to be located on the centre line of the hull, and should not be mobile. However it can be removable to facilitate the transport of the model.

4.2 Rudder

The rudder will be located on the centre line of the hull, and will move only on one axis installed on the centre line of the hull, and it shall not extend outside the overall length of the hull.

5 RIG

5.1 Definition

The rig is formed by the spars with their fittings, standing rigging and sails. A Vane or wind direction indicator does not form part of the rig.

5.2 General

5.2.1 No part of rig will extend beyond the bow nor beyond the stern of the boat nor to more than 110 cm over the sheerline at the point of coincident with the mast position.

5.2.2 The boat shall race while carrying no more than 2250 cm² of sails in its rigs.

5.2.3 The boat could be equipped with up to 3 (three) set of sails **A, B and/or C indivisible**, which each do not exceed 2250 cm² of total surface.

5.2.4 The dimensions and surfaces of each sail will be declared in writing before beginning the Races of the whole event, accompanied by a silhouette of each sail drawn out of paper. (APPENDICE 6)

5.3 Spars

5.3.1 All the spars must have a section smaller than a circle 1.2 cm in diameter.

5.3.2 Fittings constituting a definitely local extension (goosenecks, downhauls, rigging of the stays, etc.) do not form part of the section of the spars.

6 SAILS

6.1 Measurement

For the calculation of sail area, each sail will be divided into trapezoids and/or triangles, whose surfaces must be added or be cut off. The Trapezoids or Triangles shall include sail fabric. When the corners of the sail are rounded with abrupt curves, the corner of the enveloping figure is considered with the intersection of the natural prolongations on the sides of the figure used. If the edge of the sail forms an arc of more than 0.2 cm on the side of the trapezoid or triangle used to measure it, the segment of the resulting arc will be included in the surface calculation. The partial surfaces corresponding to divisions will be calculated as follows:

- a. Simple trapezoids: $(B_0 + B_1) * h / 2$
- b. Contiguous trapezoids, all the same height: $(B_0/2 + B_1 + \dots + B_n/2) * h$
- c. Triangles: $B_t * H_t / 2$
- d. Segments of Arc: $C * f / 1.5$

Where: B_0, B_1, \dots, B_n = Width of the trapezoids

h = Height of the trapezoids

B_t = Base of the triangle

C = Cord of the segment of arc

f = Arrow of the segment of arc

6.2 Checking the dimensions

Each sail will have permanent marks indicating the extremes and special points of the divisions used for its surface calculation. Dimensions are measured and /or verified edge to edge on the cloth. The minimum tension will be applied to the sails as necessary to eliminate wrinkles along the dimension verified. When checking declared dimensions, a tolerance of 0.5 cm will be accepted in total measurement (clew point to tack point to head point), and 0.2 cm in partial measurements (bases, heights, arrows of subdivisions). In case of finding any differences, and within the tolerances described above, the surface should be recalculated using the actual values obtained. The total area of the rig shall not exceed 2250 cm².

6.3 Identifications marks. (see appendice 4)

Emblem of the class:

The class emblem will be located in the upper third of the mainsail, starboard above, port side below, and measure not less than 3 cm. by 3.5 cm. (See appendix 3)

Sail Number:

Consist of the last two digits of either the allocated boat number or owner's personal number. There should be space allowed in front of the sail numbers to add the prefix 'I' when required.

The Mainsail: The sail number is located in the middle third of the mainsail, starboard above, port side below, with numbers clearly visible in contrasting colour, in Arial font, height not less than 8 cm., Made with a stroke not less than 0.8 cm. wide.

The Foresail: The sail number is located in the lower half of the sail, starboard above, port below, with numbers clearly visible in contrasting colour, in Arial font, height not less than 8 cm., made with a stroke not less than 0.8 cm. wide.

Nationality letters: (only for international events)

The nationality letters will be located in the lower third of the mainsail, starboard above, port side below, with letters clearly visible in contrasting colour, in Arial font, height not less than 4 cm., made with a stroke of not less than 0.4 cm. wide.

Identification of the rig:

The identification of the rig should be written with water-proof ink and be clear and visibly in the head corner on all the sails that form the rig. Eg "A", "B", "X", etc..

Sail area:

The measured area of each sail will be indelibly written in the tack of the sail.

7 REMOTE CONTROL EQUIPMENT

7.1 General

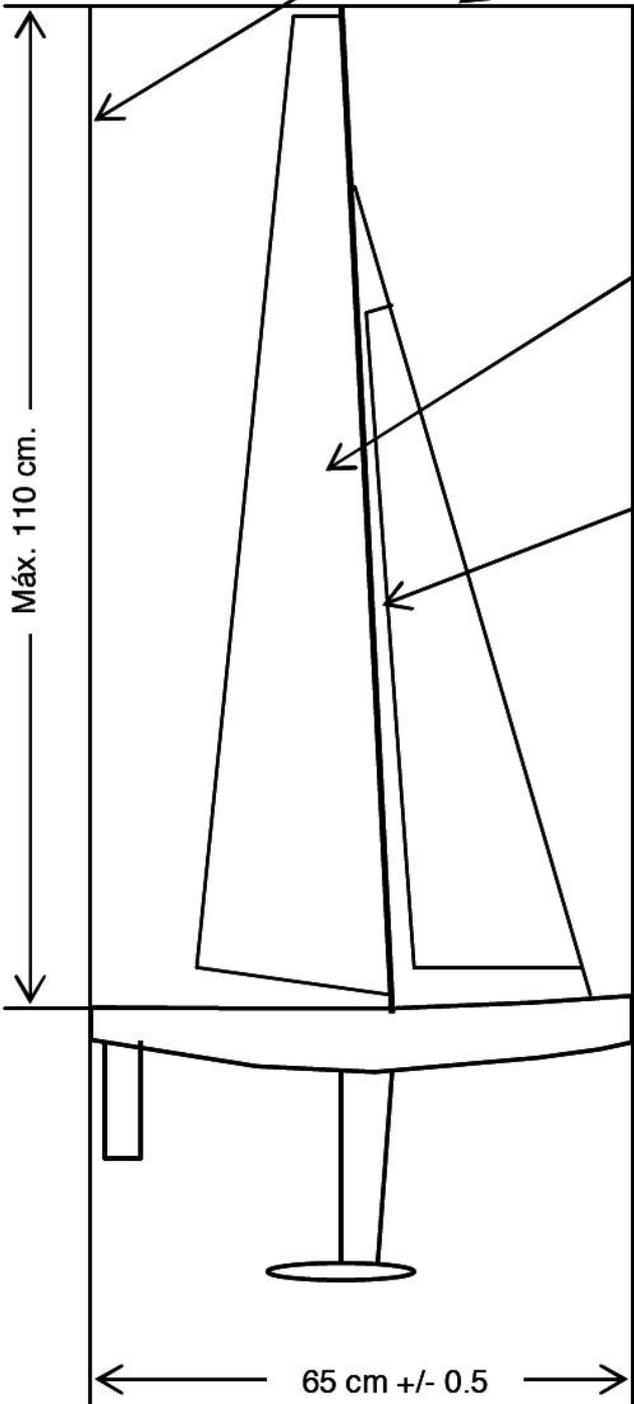
Radio systems with 2 (two) control functions shall be used. One function will act only on the rudder, and the other will act only on the sheets.

During the races of the whole event one will use only the three declared rigs, one keel (with its ballast) and one rudder.

7.2 Replacements

No component of the boat nor its equipment, except the batteries of the equipment of radio, shall be replaced during the races of the day, except if the element to be replaced is broken or lost during the event and that the RACE OFFICER considers that this breakage or loss is really fortuitous and accidental. There is no restriction about replacement of RC equipment batteries during the races of the day.

APPENDICE 1

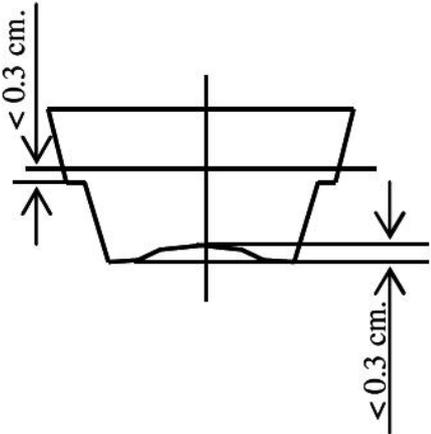


No part of rig will extend beyond the bow nor beyond the stern of the boat nor to more than 110 cm high above to the top of the deck.

The boat shall race while carrying no more than 2250 cm² of sails in its rigs.

The boat could be equipped with up to 3 (three) set of sails A, B and/or C indivisible, which each do not exceed 2250 cm² of total surface.

On the bow and from the deck, there will be a fender protecting from collisions of all the bow height, with a length of 0.5 +/- 0.1 cm by 0.3 cm of width at least, of elastomeric material (flexible gum, elastic foam, etc).



It is intention of these Rules to give ample freedom to design and build R/C sailing racing models whose length will be of 65/- 0,5 cm, with an rig height of up to 110 cm and a maximum sail area of 2250 cm².

In each section of hull, there will be no point of underwater body below 0.3 cm another point of the same section located closer to the centreline axis of the hull.

APPENDICE 2

If the edge of the sail forms an arc of more than 0.2 cm on the side of the trapezoid or triangle used to measure it, the segment of the resulting arc will be included in the surface calculation.

Segments of Arc:
 $C * f / 1.5$

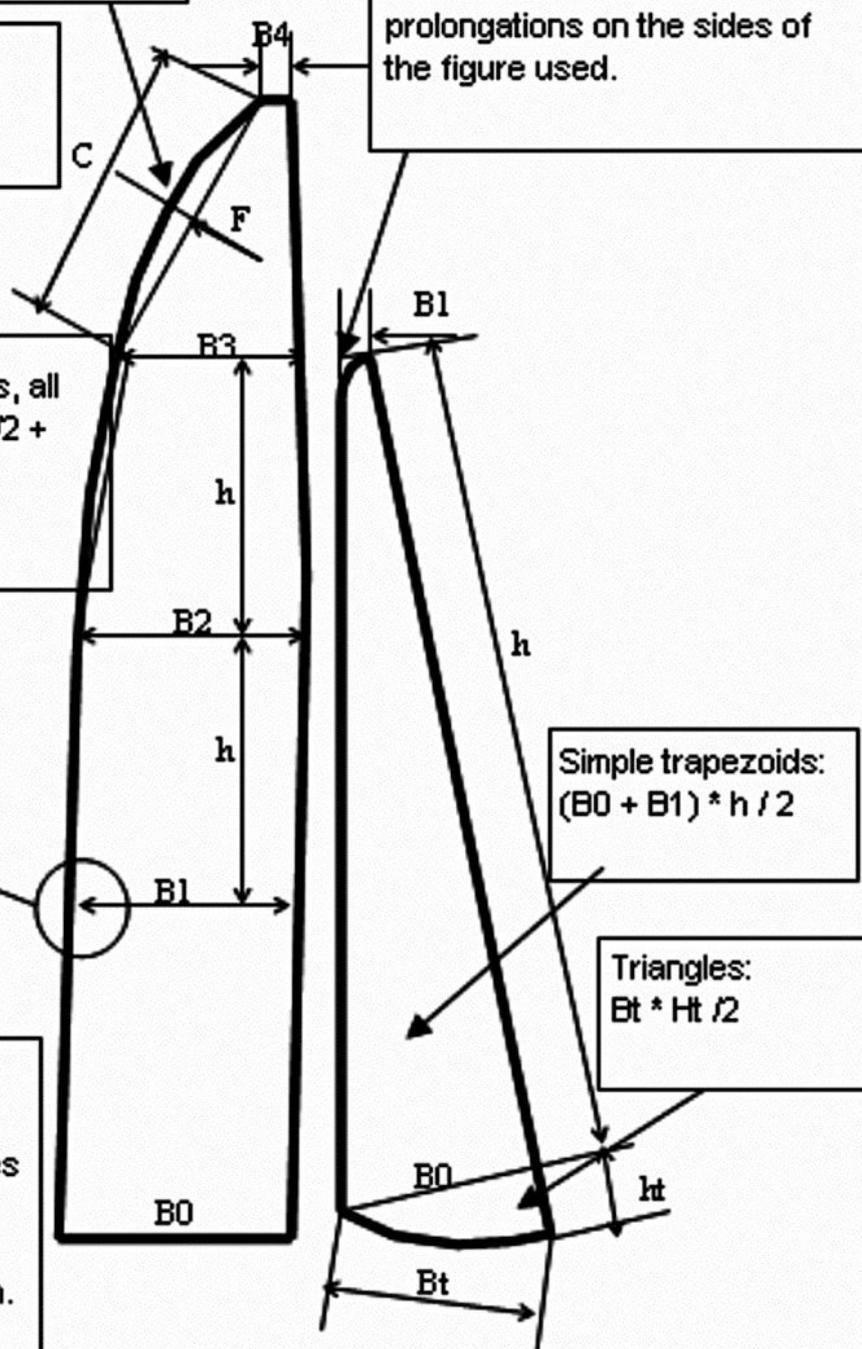
Contiguous trapezoids, all the same height:
 $(B0/2 + B1 + \dots + Bn/2) * h$

MARK

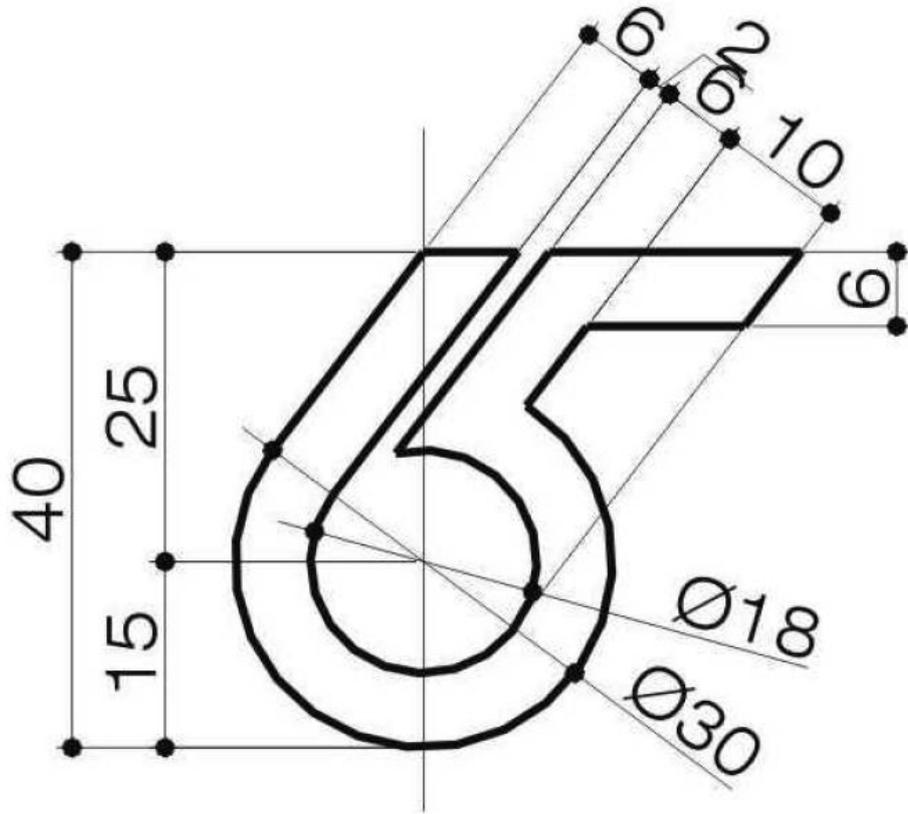


Each sail will have permanent marks indicating the extremes and special points of the divisions used for its surface calculation.

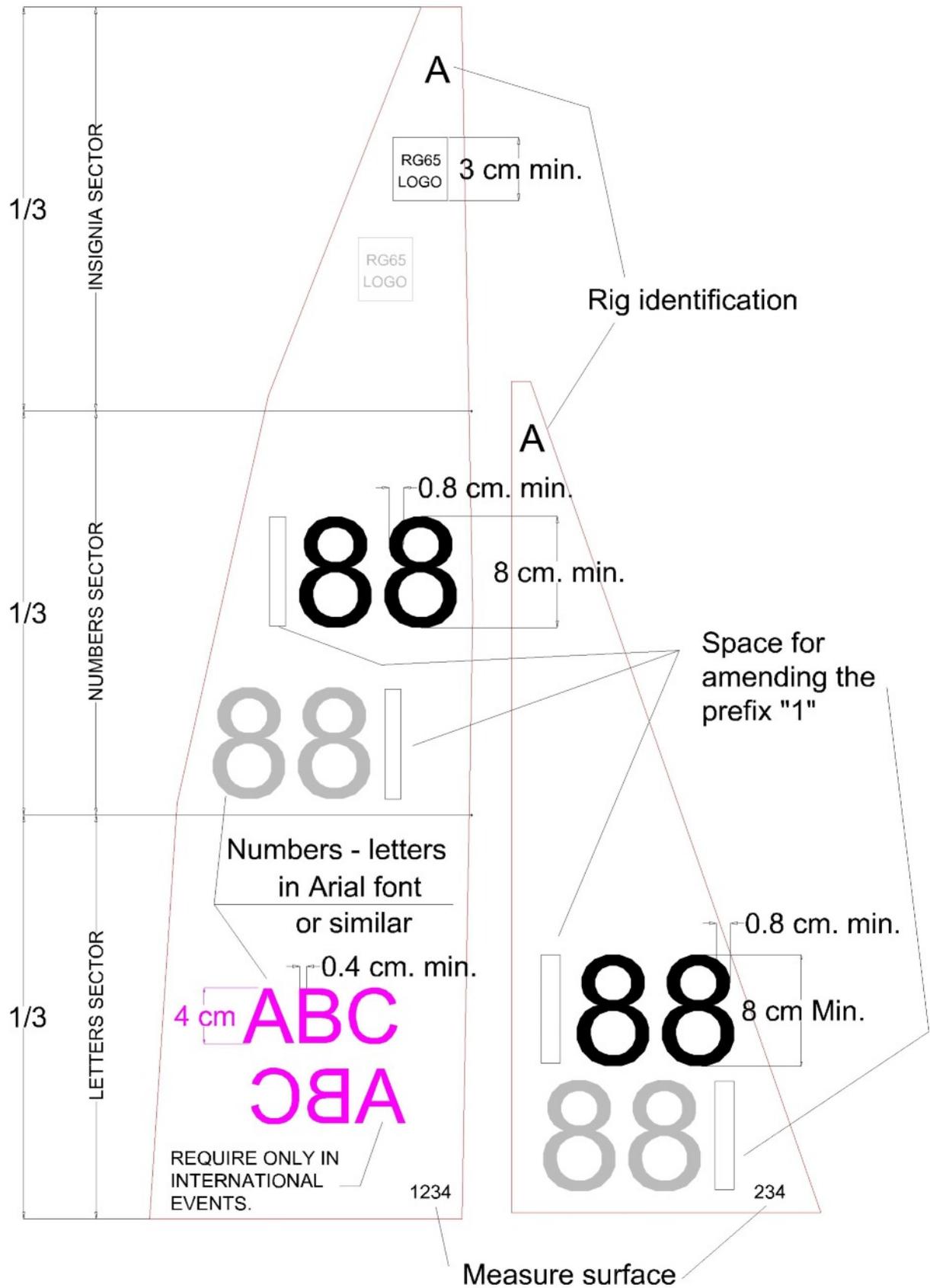
The Trapezoids or Triangles shall include sail fabric. When the corners of the sail are rounded with abrupt curves, the corner of the enveloping figure is considered with the intersection of the natural prolongations on the sides of the figure used.



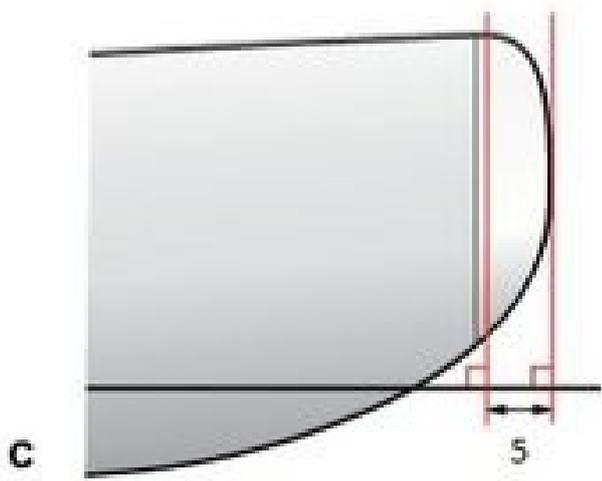
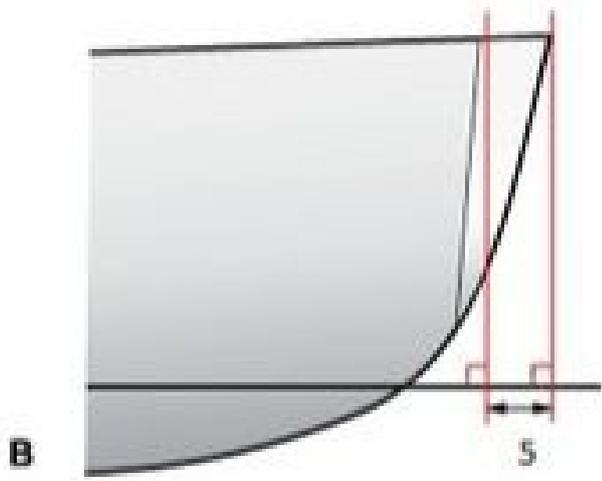
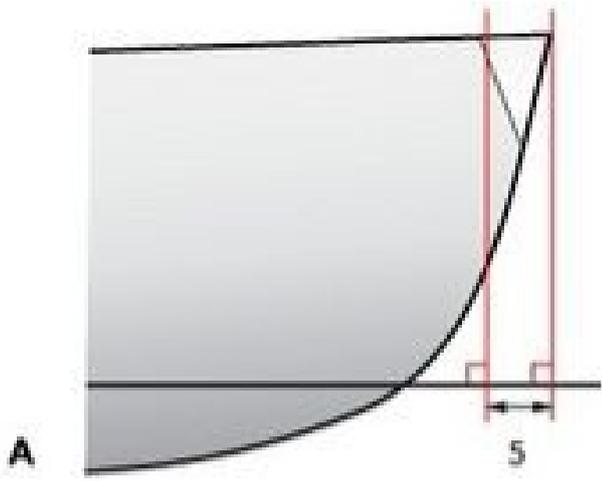
APPENDICE 3



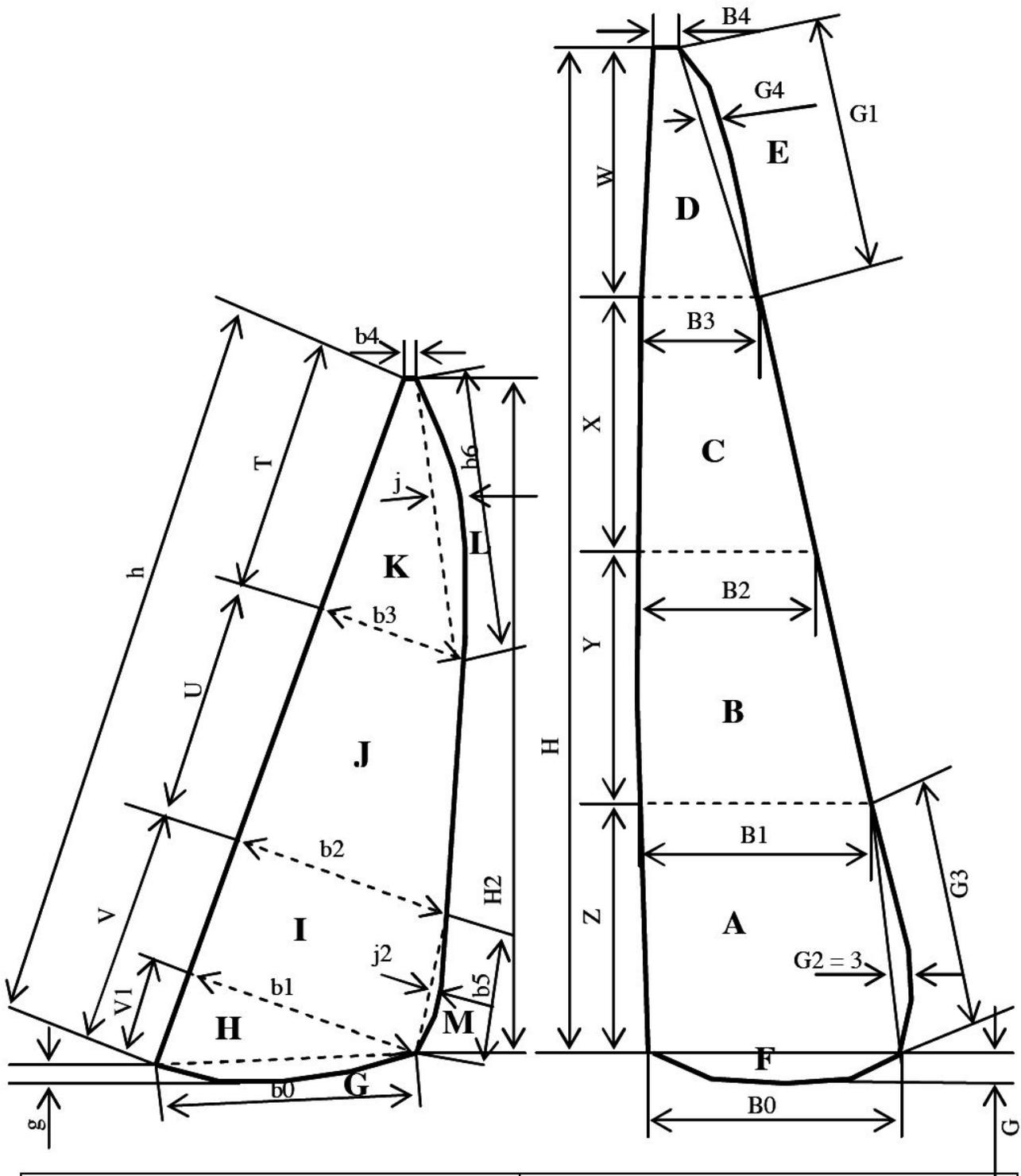
APPENDICE 4



ONLY IN CASE THAT THE IDENTIFICATION DOES NOT FIT
 USE THE APPENDIX E6 OF THE INTERNATIONAL RACING RULES



EXAMPLE FOR MEASUREMENT OF RG-65 SAILS



$G = g \times b_0 / 1.5$	$A = [(B_0 + B_1) \times Z] / 2$
$H = V_1 \times b_1 / 2$	$B = [(B_1 + B_2) \times Y] / 2$
$I = [(b_1 + b_2) \times (V - V_1)] / 2$	$C = [(B_2 + B_3) \times X] / 2$
$J = [(b_2 + b_3) \times U] / 2$	$D = [(B_3 + B_4) \times W] / 2$
$K = [(b_2 + b_4) \times T] / 2$	$E = (G_4 \times G_1) / 1.5$
$L = (j \times b_6) / 1.5$	$F = (B_0 \times g) / 1.5$
$M = (j_2 \times b_5) / 1.5$	
JIB SAIL = G + H + I + J + K + L + M	MAIN SAIL = A + B + C + D + E + F
TOTAL SURFACE = JIB SAIL + MAIN SAIL	

MEASUREMENT CERTIFICATE RG-65

Register, Measurement and ownership Certificat RG65 Class (ver.2010)

MEASUREMENT CERTIFICATE N°:

(owner number)

Owner :

Address :

City :

Telephone :

e-mail:

Owner statement.

I solemnly declare that I shall participate in regatta officials always by maintaining the model identified below in accordance with this certificate and with the rules of the Class.

signature

date :

Measurer statement

I guarantee that all the measures contained in the rules of Class and diagrams were verified, found correct and that the model is in compliance with the requirements of the Class.

Name:

signature

Origin :

date :

Change of owner.

I solemnly declare that I shall participate in official regatta always maintaining the model identified below in accordance with this certificate and with the rules of the Class.

signature

date :

Note: to participate in official regatta of the Class, the yacht must be subjected to a official measure. The official measures of the Class will complete the Forms of measure of hull and rigging attached to this Certificate and will sign them after measure and check of the model.

MEASUREMENT FORM - RIGS

CERTIF.
No.:

date	RIG A			
	The mast height, measure from the sheer, does not exceed 110 centimeters ?	yes	no	
signature and stamp	No element of the rig extend beyond the hull length ?	yes	no	
	The pars (boom, mast etc.) have a section not exceeding 1.2 cm ?	yes	no	
	The sail area of this rig does not exceed 2250 cm ² ?	yes	no	
	The numbers, identifications and their dimensions comply with rule 6.3 ?	yes	no	
	The marks indicating the measure points are visible ?	yes	no	
	The surface of each sail is indicated at its tack point ?	yes	no	
	MAIN SAIL SURFACE :	JIB SURFACE :		-

date	RIG B			
	The mast height, measure from the sheer, does not exceed 110 centimeters ?	yes	no	
signature and stamp	No element of the rig extend beyond the hull length ?	yes	no	
	The pars (boom, mast etc.) have a section not exceeding 1.2 cm ?	yes	no	
	The sail area of this rig does not exceed 2250 cm ² ?	yes	no	
	The numbers, identifications and their dimensions comply with rule 6.3 ?	yes	no	
	The marks indicating the measure points are visible ?	yes	no	
	The surface of each sail is indicated at its tack point ?	yes	no	
	MAIN SAIL SURFACE :	JIB SURFACE :		

date	RIG C			
	The mast height, measure from the sheer, does not exceed 110 centimeters ?	yes	no	
signature and stamp	No element of the rig extend beyond the hull length ?	yes	no	
	The pars (boom, mast etc.) have a section not exceeding 1.2 cm ?	yes	no	
	The sail area of this rig does not exceed 2250 cm ² ?	yes	no	
	The numbers, identifications and their dimensions comply with rule 6.3 ?	yes	no	
	The marks indicating the measure points are visible ?	yes	no	
	The surface of each sail is indicated at its tack point ?	yes	no	
	MAIN SAIL SURFACE :	JIB SURFACE :		

date	RIG D			
	The mast height, measure from the sheer, does not exceed 110 centimeters ?	yes	no	
signature and stamp	No element of the rig extend beyond the hull length ?	yes	no	
	The pars (boom, mast etc.) have a section not exceeding 1.2 cm ?	yes	no	
	The sail area of this rig does not exceed 2250 cm ² ?	yes	no	
	The numbers, identifications and their dimensions comply with rule 6.3 ?	yes	no	
	The marks indicating the measure points are visible ?	yes	no	
	The surface of each sail is indicated at its tack point ?	yes	no	
	MAIN SAIL SURFACE :	JIB SURFACE :		

date	RIG E			
	The mast height, measure from the sheer, does not exceed 110 centimeters ?	yes	no	
signature and stamp	No element of the rig extend beyond the hull length ?	yes	no	
	The pars (boom, mast etc.) have a section not exceeding 1.2 cm ?	yes	no	
	The sail area of the sail of this rig does not exceed 2250 cm ² ?	yes	no	
	The numbers, identifications and their dimensions comply with rule 6.3 ?	yes	no	
	The marks indicating the measure points are visible ?	yes	no	
	The surface of each sail is indicated at its tack point ?	yes	no	
	MAIN SAIL SURFACE :	JIB SURFACE :		

IMPORTANT: This certificate is invalid if the sails measure diagrams, given by the owner, are not attach to this measure form.

MEASUREMENT FORM - HULL

CERTIF.
No.:

HULL A		NAME :
date	Is it a monohull ?	yes no
	Is length is 65 cm +- 0.5cm ? (rule 1.1)	yes no
	Is there a bow fender, does it comply with rule 3.2 ?	yes no
	Does the hull comply with rule 3.2.1 ?	yes no
	Is the keel located centreline ?	yes no
	Is the rudder centreline ?	yes no
signature and stamp	Does the rudder not protrude beyond the hull length ?	yes no
	Does the remote control use more than two channels ?	yes no
	Does one control act only on the rudder and the other only on the sheets ?	yes no

HULL B		NAME :
date	Is it a monohull ?	yes no
	Is length is 65 cm +- 0.5cm ? (rule 1.1)	yes no
	Is there a bow fender, does it comply with rule 3.2 ?	yes no
	Does the hull comply with rule 3.2.1 ?	yes no
	Is the keel located centreline ?	yes no
	Is the rudder centreline ?	yes no
signature and stamp	Does the rudder not protrude beyond the hull length ?	yes no
	Does the remote control use more than two channels ?	yes no
	Does one control act only on the rudder and the other only on the sheets ?	yes no

HULL C		NAME :
date	Is it a monohull ?	yes no
	Is length is 65 cm +- 0.5cm ? (rule 1.1)	yes no
	Is there a bow fender, does it comply with rule 3.2 ?	yes no
	Does the hull comply with rule 3.2.1 ?	yes no
	Is the keel located centreline ?	yes no
	Is the rudder centreline ?	yes no
signature and stamp	Does the rudder not protrude beyond the hull length ?	yes no
	Does the remote control use more than two channels ?	yes no
	Does one control act only on the rudder and the other only on the sheets ?	yes no

HULL D		NAME :
date	Is it a monohull ?	yes no
	Is length is 65 cm +- 0.5cm ? (rule 1.1)	yes no
	Is there a bow fender, does it comply with rule 3.2 ?	yes no
	Does the hull comply with rule 3.2.1 ?	yes no
	Is the keel located centreline ?	yes no
	Is the rudder centreline ?	yes no
signature and stamp	Does the rudder not protrude beyond the hull length ?	yes no
	Does the remote control use more than two channels ?	yes no
	Does one control act only on the rudder and the other only on the sheets ?	yes no

NOTE TO THE MEASURER - IMPORTANT

The purpose of the certificate of measurement is critical to maintaining the balance between the yachts at the events. **All** certificate items, mainly relating to measures must be carefully observed