

<b>BOAT</b> Name <b>BLUE MAGIC</b> Sail Nr <b>ECU 14519</b>	<b>GPH</b> <b>540,2</b>	<b>HULL</b> Length Overall <b>13,829m</b> Maximum Beam <b>3,888m</b> Displacement <b>9.852kg</b> Draft <b>2,834m</b> IMS Reg. Division <b>Cruiser/Racer</b> Dynamic Allowance <b>0,000%</b> Fwd Accommodation <b>Yes</b> Hull Construction <b>Cored</b> Carbon Rudder <b>Yes</b> Crew Arm Extension
<b>GENERAL</b> Class <b>SWAN 45</b> Designer <b>GERMANS FRERS</b> Builder <b>NAUTOR</b> Series <b>11/2001</b> Age <b>04/2003</b> Age Allowance <b>0,487%</b> Offset File <b>SWAN45.OFF - 22/09/2011 01:04:10</b> Measurement by <b>P. GUTIERREZ - 02/06/2017</b>		IMSL <b>12,630m</b> VCGD <b>-0,264m</b> Sink <b>26,86kg/mm</b> RL <b>11,420m</b> VCGM <b>-0,319m</b> WS <b>36,65m<sup>2</sup></b> LSMO <b>12,428m</b> Displacement/Length ratio <b>5,1324</b>



World Leader in Rating Technology

**2017**  
ORC International  
Certificate

**Rating Office**  
Federación Ecuatoriana  
de Vela  
Patricio D. Gutiérrez - RO  
gutierrez@yca.org.ar



	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
	Low	Medium	High	Low	Medium	High
Time On Distance	<b>527,5</b>			<b>589,9</b>		
Time On Time	<b>1,1374</b>			<b>1,1443</b>		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	<b>613,4</b>	<b>480,8</b>	<b>427,6</b>	<b>798,8</b>	<b>594,0</b>	<b>513,1</b>
Time on Time	<b>1,1004</b>	<b>1,4039</b>	<b>1,5784</b>	<b>0,8450</b>	<b>1,1363</b>	<b>1,3156</b>

Wind Velocity	TIME ALLOWANCES						
	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	<b>890,7</b>	<b>740,5</b>	<b>660,4</b>	<b>624,9</b>	<b>606,7</b>	<b>595,7</b>	<b>580,4</b>
52°	<b>582,6</b>	<b>489,9</b>	<b>452,5</b>	<b>439,4</b>	<b>432,8</b>	<b>428,7</b>	<b>420,3</b>
60°	<b>547,5</b>	<b>468,0</b>	<b>439,5</b>	<b>427,1</b>	<b>420,4</b>	<b>416,1</b>	<b>407,6</b>
75°	<b>516,5</b>	<b>453,0</b>	<b>428,8</b>	<b>413,0</b>	<b>400,8</b>	<b>393,5</b>	<b>385,5</b>
90°	<b>515,6</b>	<b>451,5</b>	<b>426,8</b>	<b>409,0</b>	<b>391,6</b>	<b>376,1</b>	<b>359,3</b>
110°	<b>542,5</b>	<b>455,4</b>	<b>423,0</b>	<b>403,0</b>	<b>390,5</b>	<b>377,2</b>	<b>354,6</b>
120°	<b>562,1</b>	<b>465,6</b>	<b>429,7</b>	<b>406,1</b>	<b>381,7</b>	<b>365,8</b>	<b>343,5</b>
135°	<b>629,5</b>	<b>511,1</b>	<b>451,5</b>	<b>424,7</b>	<b>402,8</b>	<b>379,1</b>	<b>330,2</b>
150°	<b>751,5</b>	<b>603,1</b>	<b>510,0</b>	<b>454,6</b>	<b>427,5</b>	<b>406,8</b>	<b>362,8</b>
Run VMG	<b>867,8</b>	<b>696,4</b>	<b>588,9</b>	<b>519,6</b>	<b>475,0</b>	<b>440,6</b>	<b>398,5</b>

**Certificate**  
Number **145194**  
ORC Ref **ECU00005616**  
Issued On **04/10/2017**  
VPP Ver. **2017 1.00**  
Valid until **31/03/2018**

**Crew Weight**  
Declared **950kg**  
Default\* **939kg**  
Non Manual Pwr **No**

**Special Scoring**  
ToD ToT  
Non Spin GPH **564,8** **1,0623**  
Non Spin OSN **552,2** **1,0865**

Selected Courses							
Windward / Leeward	<b>879,3</b>	<b>718,4</b>	<b>624,6</b>	<b>572,2</b>	<b>540,8</b>	<b>518,2</b>	<b>489,5</b>
Circular Random	<b>738,5</b>	<b>598,9</b>	<b>524,7</b>	<b>481,5</b>	<b>454,4</b>	<b>435,8</b>	<b>410,0</b>
Ocean for PCS	<b>910,7</b>	<b>705,6</b>	<b>590,0</b>	<b>519,3</b>	<b>473,1</b>	<b>440,4</b>	<b>394,2</b>
Non Spinnaker	<b>782,7</b>	<b>630,3</b>	<b>547,9</b>	<b>499,3</b>	<b>468,5</b>	<b>447,5</b>	<b>419,1</b>

**Sails Limitations**  
Headsails **7** | Spinnakers **5**

Velocity Prediction in Knots for True Wind Speeds							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	<b>42,8°</b>	<b>42,0°</b>	<b>40,8°</b>	<b>38,9°</b>	<b>37,8°</b>	<b>37,5°</b>	<b>36,9°</b>
Beat VMG	<b>4,04</b>	<b>4,86</b>	<b>5,45</b>	<b>5,76</b>	<b>5,93</b>	<b>6,04</b>	<b>6,20</b>
52°	<b>6,18</b>	<b>7,35</b>	<b>7,96</b>	<b>8,19</b>	<b>8,32</b>	<b>8,40</b>	<b>8,57</b>
60°	<b>6,58</b>	<b>7,69</b>	<b>8,19</b>	<b>8,43</b>	<b>8,56</b>	<b>8,65</b>	<b>8,83</b>
75°	<b>6,97</b>	<b>7,95</b>	<b>8,40</b>	<b>8,72</b>	<b>8,98</b>	<b>9,15</b>	<b>9,34</b>
90°	<b>6,98</b>	<b>7,97</b>	<b>8,43</b>	<b>8,80</b>	<b>9,19</b>	<b>9,57</b>	<b>10,02</b>
110°	<b>6,64</b>	<b>7,91</b>	<b>8,51</b>	<b>8,93</b>	<b>9,22</b>	<b>9,54</b>	<b>10,15</b>
120°	<b>6,41</b>	<b>7,73</b>	<b>8,38</b>	<b>8,86</b>	<b>9,43</b>	<b>9,84</b>	<b>10,48</b>
135°	<b>5,72</b>	<b>7,04</b>	<b>7,97</b>	<b>8,48</b>	<b>8,94</b>	<b>9,50</b>	<b>10,90</b>
150°	<b>4,79</b>	<b>5,97</b>	<b>7,06</b>	<b>7,92</b>	<b>8,42</b>	<b>8,85</b>	<b>9,92</b>
Run VMG	<b>4,15</b>	<b>5,17</b>	<b>6,11</b>	<b>6,93</b>	<b>7,58</b>	<b>8,17</b>	<b>9,03</b>
Gybe Angles	<b>141,6°</b>	<b>146,1°</b>	<b>149,2°</b>	<b>155,3°</b>	<b>166,4°</b>	<b>180,0°</b>	<b>180,0°</b>

**Class Division Length**  
CDL = **12,026**

**Storm Sails Areas**  
Heavy Weather Jib **47,84**  
Storm Jib (JL=12,24) **17,72**  
Storm Trysail **21,53**

**Owner**  
SCUDERIA TIVOLI


I certify that I understand my responsibilities under ORC Rules and Regulations

Signature

<b>BOAT</b>	
Name <b>BLUE MAGIC</b>	Sail Nr <b>ECU 14519</b>
File <b>ECU14519</b>	Data in <b>meters/kilograms</b>

<b>INCLINING TEST AND FREEBOARDS</b>		
Inclining Test <b>Current Inclining</b>		
Flotation date <b>29/09/2017</b>		SG <b>1,0253</b>
FFM <b>1,497</b>	FF <b>1,500</b>	SFFP <b>0,295</b>
FAM <b>1,181</b>	FA <b>1,181</b>	SAFP <b>13,301</b>
W1 <b>140,0</b>	PD1 <b>470,9</b>	WD <b>11,300</b>
W2 <b>140,0</b>	PD2 <b>472,3</b>	GSA <b>1,0</b>
W3 <b>140,0</b>	PD3 <b>471,8</b>	RSA <b>1,0</b>
W4 <b>140,0</b>	PD4 <b>473,7</b>	PLM <b>9000,0</b>
LCF from stem on CL / on sheer		<b>7,708 / 7,940</b>
Maximum beam station from stem		<b>8,935</b>
RM Measured		<b>263,8kg·m</b>
RM Default		<b>268,9kg·m</b>
Limit of positive stability / Stab.Index		<b>134,6° / 141,5</b>
Freeboard at mast at 5,435		<b>1,270</b>

<b>RIG</b>			
Forestay Tension <b>Aft</b>	Spreaders <b>2</b>		
Inner Stay <b>None Fitted</b>	Runners <b>0</b>		
Carbon Mast <b>Yes</b>	Jumper Struts <b>None</b>		
Taper Hollows	Jib Furler <b>No</b>		
Fiber Rigging	Main Furler		
Lenticular Rigging	Without Backstay <b>No</b>		
Articulated Bowsprit <b>No</b>			
P <b>18,639</b>	E <b>6,600</b>	MDT1 <b>0,133</b>	MW <b>0,260</b>
IG <b>18,702</b>	J <b>5,400</b>	MDL1 <b>0,272</b>	GO <b>0,295</b>
ISP <b>18,873</b>	SFJ <b>0,035</b>	MDT2 <b>0,105</b>	BD <b>0,303</b>
BAS <b>1,855</b>	SPL <b>5,400</b>	MDL2 <b>0,141</b>	MWT <b>285,00</b>
FSP <b>0,070</b>	TPS	TL <b>1,500</b>	MCG <b>6,800</b>




World Leader in Rating Technology

**2017**

**IMS Measurement Certificate**

**Certificate**

Number **145194**  
 ORC Ref **ECU00005616**  
 Issued On **04/10/2017**  
 VPP Ver. **2017 1.00**  
 Valid until **31/03/2018**



<b>MIZZEN RIG AND SAILS</b>	
N/A	

<b>PROPELLER</b>		
Installation <b>Strut</b>	PRD <b>0,425</b>	
Type <b>Folding 2 blades</b>	PBW <b>0,108</b>	
Twin Screw	PIPA <b>0,0033</b>	
ST1 <b>0,048</b>	ST3 <b>0,170</b>	ST5 <b>0,330</b>
ST2 <b>0,170</b>	ST4 <b>0,098</b>	EDL <b>2,770</b>

<b>COMMENTS</b>	
ex GASTRA IT 14518	

<b>MOVEABLE BALLAST</b>	
N/A	

<b>CENTERBOARD</b>	
N/A	

<b>SAILS (Maximum Areas)</b>						
Mainsail	MHB	MUW	MTW	MHW	MQW	Area Area (r) Formula
	0,275	1,63	2,75	4,46	5,67	76,31 78,32 $P/8 \cdot (E + 2 \cdot MQW + 2 \cdot MHW + 1.5 \cdot MTW + MUW + 0.5 \cdot MHB)$
Symmetric	SLU	SLE	SL	SHW	SFL	
	18,35	18,35	18,35	9,80	9,68	149,49 $SL \cdot (SFL + 4 \cdot SHW) / 6$
Asymmetric	SLU	SLE	SL	SHW	SFL	
	19,25	17,98	18,61	9,93	9,65	153,17 $AS \cdot (SFL + 4 \cdot SHW) / 6$

<b>HEADSAILS</b>												
Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HHB)												
HHB	HUW	HTW	HHW	HQW	HLP	HLU	Area	Btn	Fly	Meas.Date	Material	Comment
0,15	0,88	1,57	2,90	4,27	5,70	18,68	54,40	Y		03/10/2017	Carbon	3DI-M2014
0,15	0,88	1,57	2,90	4,26	5,70	18,67	54,33	Y		03/10/2017	Carbon	3DI
0,14	0,84	1,54	2,90	4,31	5,71	18,64	54,29	Y		03/10/2017	Carbon	3DI-M2013
0,11	0,81	1,52	2,77	4,10	5,59	18,63	52,32	Y		03/10/2017	Carbon	3DI

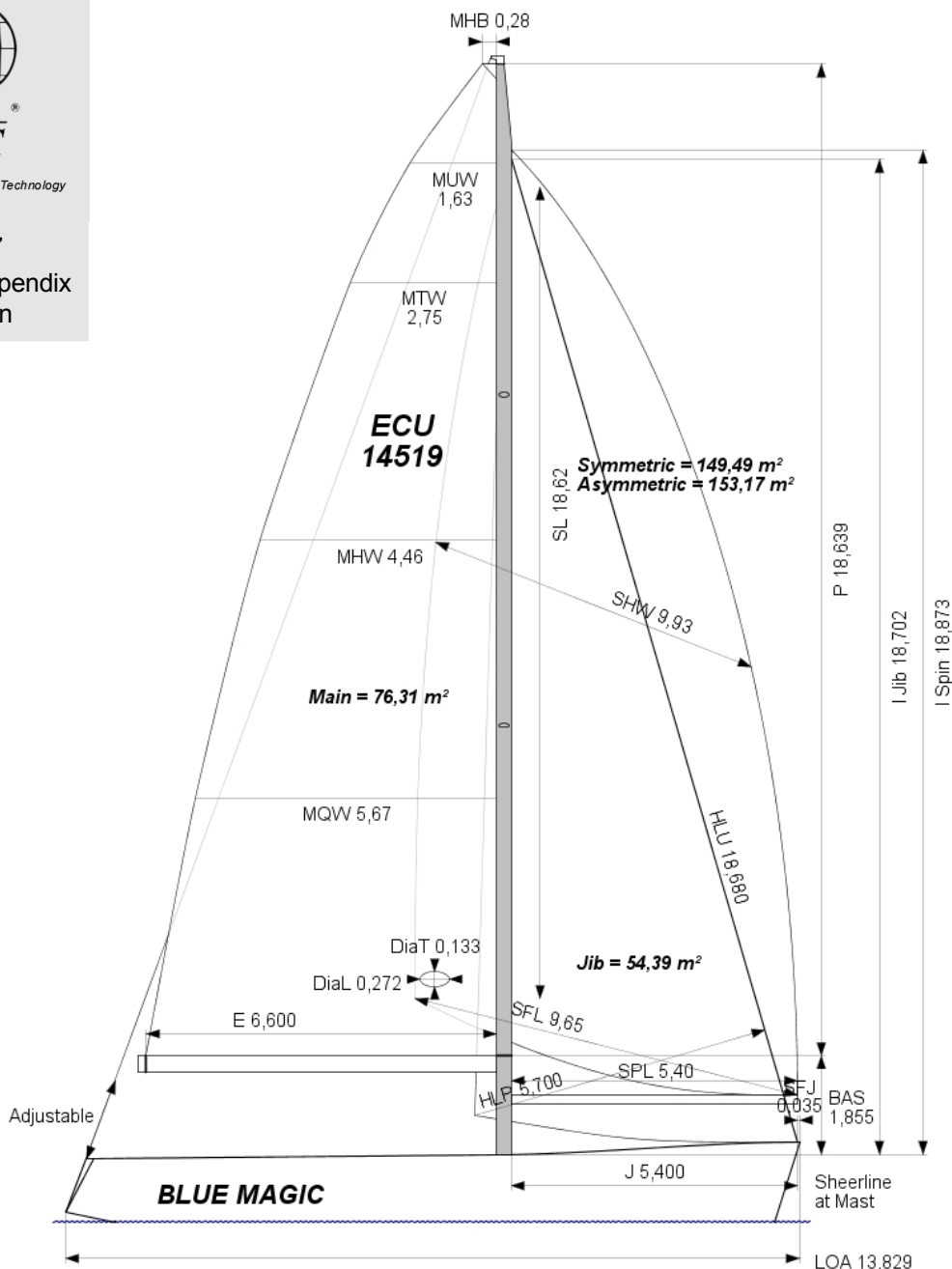
<b>MEASUREMENT INVENTORY</b>				
Measurer <b>PATRICIO GUTIERREZ P G</b>				
Date <b>29/09/2017</b>				
Comment				
Id	Item	Weight	Distance	VCG Description
Id	Item	Maker	Model	
3A	Engine	VOLVO PENTA	44KW	
Id	Item	Weight	Description	

<b>MEASUREMENT INVENTORY</b>									
Id	Item	Tank Use	Tank Type	Capcty	Dist.	VCG	Condtn	Description	
4C	Tank	AGUA	PLASTICO	120,0	6,50	0,20	0-0	ESTRIBOR	
4B	Tank	AGUA	PLASTICO	120,0	7,00	0,20	0-0	ESTRIBOR	
4A	Tank	DIESEL	ALUMINIO	150,0	6,40	0,10	37,5	BABOR	
Id	Item	Weight	Distance	VCG	Description				
2B	Battery	32,0	5,80	0,20	BATERIA				
2A	Battery	32,0	5,80	0,20	BATERIA				
B4	Misc	10,0	8,10	0,60	COCINA BASCULANTE				
C6	Misc	5,0	6,20	0,07	GATO HIDRAULICO				



World Leader in Rating Technology

2017  
Certificate Appendix  
Sail Plan



**SAILS INVENTORY**

**MAINSAIL (1)**

Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment
MNI2	0,275	1,63	2,75	4,46	5,67	76,31	P. GUTIERREZ	04/10/2017	NORTH	Carbon	3DI-USADA

**HEADSAILS (4)**

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
G-1	0,15	0,88	1,57	2,90	4,27	5,70	18,68	106%	54,40	Y	P	P	03/10/2017	NORTH	Carbon	3DI-M2014
LT-1	0,15	0,88	1,57	2,90	4,26	5,70	18,67	106%	54,33	Y	P	P	03/10/2017	NORTH	Carbon	3DI
G-2	0,14	0,84	1,54	2,90	4,31	5,71	18,64	106%	54,29	Y	P	P	03/10/2017	NORTH	Carbon	3DI-M2013
G1 H	0,11	0,81	1,52	2,77	4,10	5,59	18,63	104%	52,32	Y	P	P	03/10/2017	NORTH	Carbon	3DI

**SYMMETRIC SPINNAKERS (2)**

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
S2 H	18,35	18,35	18,35	9,80	9,68	149,49	A.V. M.	31/05/2017	NORTH	Nylon	BL
S2 L	18,35	18,35	18,35	9,80	9,68	149,49		03/10/2017	NORTH	Nylon	

**ASYMMETRIC SPINNAKERS (3)**

Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
A1	19,25	17,98	18,62	9,93	9,65	153,17	asym	P GUTIERREZ	03/10/2017	NORTH	Nylon	BL/ROJO
A1.5	18,72	18,00	18,36	9,75	9,56	148,59	asym	A. V. M.	31/05/2017	NORTH	Carbon	USADA
A0	18,81	17,82	18,31	7,52	9,75	121,58	asym	A.V.M.	13/08/2017	NORTH	Technora	GRIS