

<b>BOAT</b> Name <b>Merlin</b> Sail Nr <b>USA 8955</b>	<b>GPH</b> <b>429.1</b>	<b>HULL</b> Length Overall <b>20.906m</b> Maximum Beam <b>3.712m</b> Displacement <b>10,608kg</b> Draft <b>3.237m</b> Plan Review IMS Reg. Division <b>Performance</b> Dynamic Allowance <b>0.001%</b> Hull Construction <b>Cored</b> Carbon Rudder <b>No</b> Crew Arm Extension IMSL <b>18.765m</b> VCGD <b>-0.559m</b> Sink <b>37.76kg/mm</b> RL <b>16.872m</b> VCGM <b>-0.656m</b> WS <b>47.84m<sup>2</sup></b> LSM0 <b>18.389m</b> Displacement/Length ratio <b>1.7059</b>
<b>GENERAL</b> Class <b>Bill Lee Custom 68</b> Designer <b>Bill Lee</b> Builder <b>Lee, Bill</b> Series <b>01/1977</b> Age <b>01/1977</b> Age Allowance <b>0.487%</b> Offset File <b>USA8955.off - 29/02/2020 17:49:10</b> Measurement by - <b>05/01/2019</b>		



**2020**  
ORC International  
Certificate

**Rating Office**  
Offshore  
Racing  
Congress

**COPY ONLY**  
**Invalid for**  
**RACING**

World Leader In Rating Technology

SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time on Distance	<b>419.9</b>			<b>478.1</b>		
Time on Time	<b>1.4288</b>			<b>1.4119</b>		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	<b>491.5</b>	<b>381.4</b>	<b>330.4</b>	<b>651.7</b>	<b>483.4</b>	<b>409.6</b>
Time on Time	<b>1.3733</b>	<b>1.7699</b>	<b>2.0431</b>	<b>1.0358</b>	<b>1.3964</b>	<b>1.6478</b>

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	<b>721.7</b>	<b>595.0</b>	<b>541.7</b>	<b>514.1</b>	<b>499.6</b>	<b>486.4</b>	<b>471.5</b>
52°	<b>460.3</b>	<b>388.9</b>	<b>365.8</b>	<b>355.3</b>	<b>348.5</b>	<b>344.8</b>	<b>331.4</b>
60°	<b>425.6</b>	<b>368.6</b>	<b>351.7</b>	<b>341.7</b>	<b>334.0</b>	<b>328.6</b>	<b>314.2</b>
75°	<b>397.8</b>	<b>353.3</b>	<b>333.7</b>	<b>320.2</b>	<b>311.0</b>	<b>304.2</b>	<b>294.1</b>
90°	<b>399.1</b>	<b>350.9</b>	<b>325.2</b>	<b>305.6</b>	<b>293.5</b>	<b>284.5</b>	<b>272.1</b>
110°	<b>418.3</b>	<b>355.0</b>	<b>328.7</b>	<b>307.9</b>	<b>292.1</b>	<b>274.5</b>	<b>243.9</b>
120°	<b>441.4</b>	<b>362.2</b>	<b>329.8</b>	<b>303.1</b>	<b>284.7</b>	<b>268.7</b>	<b>239.2</b>
135°	<b>515.7</b>	<b>402.7</b>	<b>352.8</b>	<b>321.4</b>	<b>291.9</b>	<b>266.3</b>	<b>222.7</b>
150°	<b>629.4</b>	<b>487.7</b>	<b>408.7</b>	<b>363.1</b>	<b>331.6</b>	<b>304.0</b>	<b>247.8</b>
Run VMG	<b>726.7</b>	<b>563.2</b>	<b>471.9</b>	<b>419.7</b>	<b>385.0</b>	<b>351.0</b>	<b>286.1</b>

**Certificate**  
Number **US6499**  
ORC Ref **03410000TLT**  
Issued On **11/01/2021**  
VPP Ver. **2020 1.02**  
Valid until **31/01/2021**

**Crew Weight**  
Default **1,641kg**  
Maximum **1,320kg**  
Minimum\* **990kg**  
*\*when applied by the NoR and SI*  
Non Manual Pwr **No**

**Special Scoring**

	ToD	ToT
Non Spin GPH	<b>458.0</b>	<b>1.3100</b>
Non Spin OSN	<b>451.0</b>	<b>1.3304</b>

Selected Courses							
Windward / Leeward	<b>724.2</b>	<b>579.1</b>	<b>506.8</b>	<b>466.9</b>	<b>442.3</b>	<b>418.7</b>	<b>378.8</b>
Circular Random	<b>592.4</b>	<b>478.1</b>	<b>416.7</b>	<b>380.1</b>	<b>355.8</b>	<b>337.6</b>	<b>308.9</b>
Coastal / Long Distance	<b>724.5</b>	<b>541.8</b>	<b>452.8</b>	<b>398.9</b>	<b>367.7</b>	<b>340.1</b>	<b>293.3</b>
Non Spinnaker	<b>641.7</b>	<b>514.2</b>	<b>444.3</b>	<b>401.9</b>	<b>373.8</b>	<b>353.7</b>	<b>324.7</b>

**Sails Limitations**

Headsails	Spinnakers
<b>8</b>	<b>6</b>

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>45.0°</b>	<b>42.8°</b>	<b>41.3°</b>	<b>39.8°</b>	<b>39.0°</b>	<b>38.3°</b>	<b>37.5°</b>
Beat VMG	<b>4.99</b>	<b>6.05</b>	<b>6.65</b>	<b>7.00</b>	<b>7.21</b>	<b>7.40</b>	<b>7.64</b>
52°	<b>7.82</b>	<b>9.26</b>	<b>9.84</b>	<b>10.13</b>	<b>10.33</b>	<b>10.44</b>	<b>10.86</b>
60°	<b>8.46</b>	<b>9.77</b>	<b>10.24</b>	<b>10.54</b>	<b>10.78</b>	<b>10.96</b>	<b>11.46</b>
75°	<b>9.05</b>	<b>10.19</b>	<b>10.79</b>	<b>11.24</b>	<b>11.58</b>	<b>11.83</b>	<b>12.24</b>
90°	<b>9.02</b>	<b>10.26</b>	<b>11.07</b>	<b>11.78</b>	<b>12.27</b>	<b>12.65</b>	<b>13.23</b>
110°	<b>8.61</b>	<b>10.14</b>	<b>10.95</b>	<b>11.69</b>	<b>12.32</b>	<b>13.12</b>	<b>14.76</b>
120°	<b>8.16</b>	<b>9.94</b>	<b>10.91</b>	<b>11.88</b>	<b>12.64</b>	<b>13.40</b>	<b>15.05</b>
135°	<b>6.98</b>	<b>8.94</b>	<b>10.20</b>	<b>11.20</b>	<b>12.33</b>	<b>13.52</b>	<b>16.16</b>
150°	<b>5.72</b>	<b>7.38</b>	<b>8.81</b>	<b>9.91</b>	<b>10.86</b>	<b>11.84</b>	<b>14.53</b>
Run VMG	<b>4.95</b>	<b>6.39</b>	<b>7.63</b>	<b>8.58</b>	<b>9.35</b>	<b>10.26</b>	<b>12.58</b>
Gybe Angles	<b>138.0°</b>	<b>138.5°</b>	<b>145.0°</b>	<b>150.5°</b>	<b>154.0°</b>	<b>149.0°</b>	<b>146.0°</b>

**Class Division Length**  
CDL = **17.852**

**Storm Sails Areas**

Heavy Weather Jib	<b>64.82</b>
Storm Jib (JL=14.25)	<b>24.01</b>
Storm Trysail	<b>27.66</b>

**Owner**

<b>BOAT</b>	
Name <b>Merlin</b> File <b>US6499</b>	Sail Nr <b>USA 8955</b> Data in <b>meters/kilograms</b>

<b>RIG</b>	
Forestay Tension <b>Aft</b>	Spreaders <b>3</b>
Inner Stay <b>None Fitted</b>	Runners/Checkstays <b>2</b>
Carbon Mast <b>Yes</b>	Jib Furler <b>No</b>
Fiber Rigging <b>No</b>	Main Furler <b>No</b>
Non-Circular Rigging <b>No</b>	
Articulated Bowsprit <b>No</b>	

P <b>20.429</b>	E <b>7.735</b>	MDT1 <b>0.140</b>	MW <b>0.243</b>
IG <b>21.912</b>	J <b>7.020</b>	MDL1 <b>0.262</b>	GO <b>0.243</b>
ISP <b>22.642</b>	SFJ <b>2.234</b>	MDT2 <b>0.130</b>	BD <b>0.335</b>
BAS <b>1.939</b>	SPL <b>9.270</b>	MDL2 <b>0.213</b>	MWT <b>244.90</b>
FSD <b>0.073</b>	TPS <b>9.290</b>	TL <b>3.000</b>	MCG <b>7.893</b>

**INCLINING TEST AND FREEBOARDS**

Inclining Test <b>Current Inclining</b>		
Flotation date <b>05/02/2019</b>		SG <b>1.0250</b>
FFM <b>1.265</b>	FF <b>1.265</b>	SFFP <b>1.207</b>
FAM <b>0.990</b>	FA <b>0.990</b>	SAFP <b>20.117</b>
W1 <b>157.4</b>	PD1 <b>486.5</b>	WD <b>15.180</b>
W2 <b>157.4</b>	PD2 <b>486.5</b>	GSA <b>1.0</b>
W3 <b>157.4</b>	PD3 <b>486.5</b>	RSA <b>1.0</b>
W4 <b>157.4</b>	PD4 <b>486.5</b>	PLM <b>9000.0</b>
LCF from stem on CL / on sheer		<b>11.128 / 11.283</b>
Maximum beam station from stem		<b>12.893</b>
RM Measured		<b>386.8kg-m</b>
RM Default		<b>492.6kg-m</b>
Limit of positive stability / Stab.Index		<b>132.6° / 143.8</b>
Freeboard at mast at 9.254		<b>1.104</b>



**ORC**  
Offshore Racing Congress  
World leader in rating technology

**2020**  
**IMS Measurement**  
**Certificate**

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

<b>PROPELLER</b>		
Installation <b>Strut</b>	PRD <b>0.540</b>	
Type <b>Folding 2 blades</b>	PBW <b>0.140</b>	
Twin Screw <b>No</b>	PIPA <b>0.0047</b>	
ST1 <b>0.060</b>	ST3 <b>0.205</b>	
ST2 <b>0.205</b>	ST4 <b>0.120</b>	
	ST5 <b>0.330</b>	
	EDL <b>3.130</b>	

<b>Certificate</b>	
Number <b>US6499</b>	
ORC Ref <b>03410000TLT</b>	
Issued On <b>11/01/2021</b>	
VPP Ver. <b>2020 1.02</b>	
Valid until <b>31/01/2021</b>	

<b>COMMENTS</b>

<b>MOVABLE BALLAST</b>
N/A

<b>CENTERBOARD</b>
N/A



**World Leader In Rating Technology**

<b>SAILS (Maximum Areas)</b>									
<b>Mainsail</b>	<b>MHB</b>	<b>MUW</b>	<b>MTW</b>	<b>MHW</b>	<b>MQW</b>	<b>Area</b>	<b>Area (r)</b>	<b>Formula</b>	
	0.31	1.73	2.92	4.78	6.34	92.54	94.58	P/8 · (E + 2·MQW+ 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
<b>Symmetric</b>									
Not Available									
<b>Asymmetric</b>	<b>SLU</b>	<b>SLE</b>	<b>SL</b>	<b>SHW</b>	<b>SFL</b>	<b>Area</b>	<b>Formula</b>		
	25.80	22.46	24.13	12.85	16.95	274.88	AS · (SFL + 4·SHW) / 6		

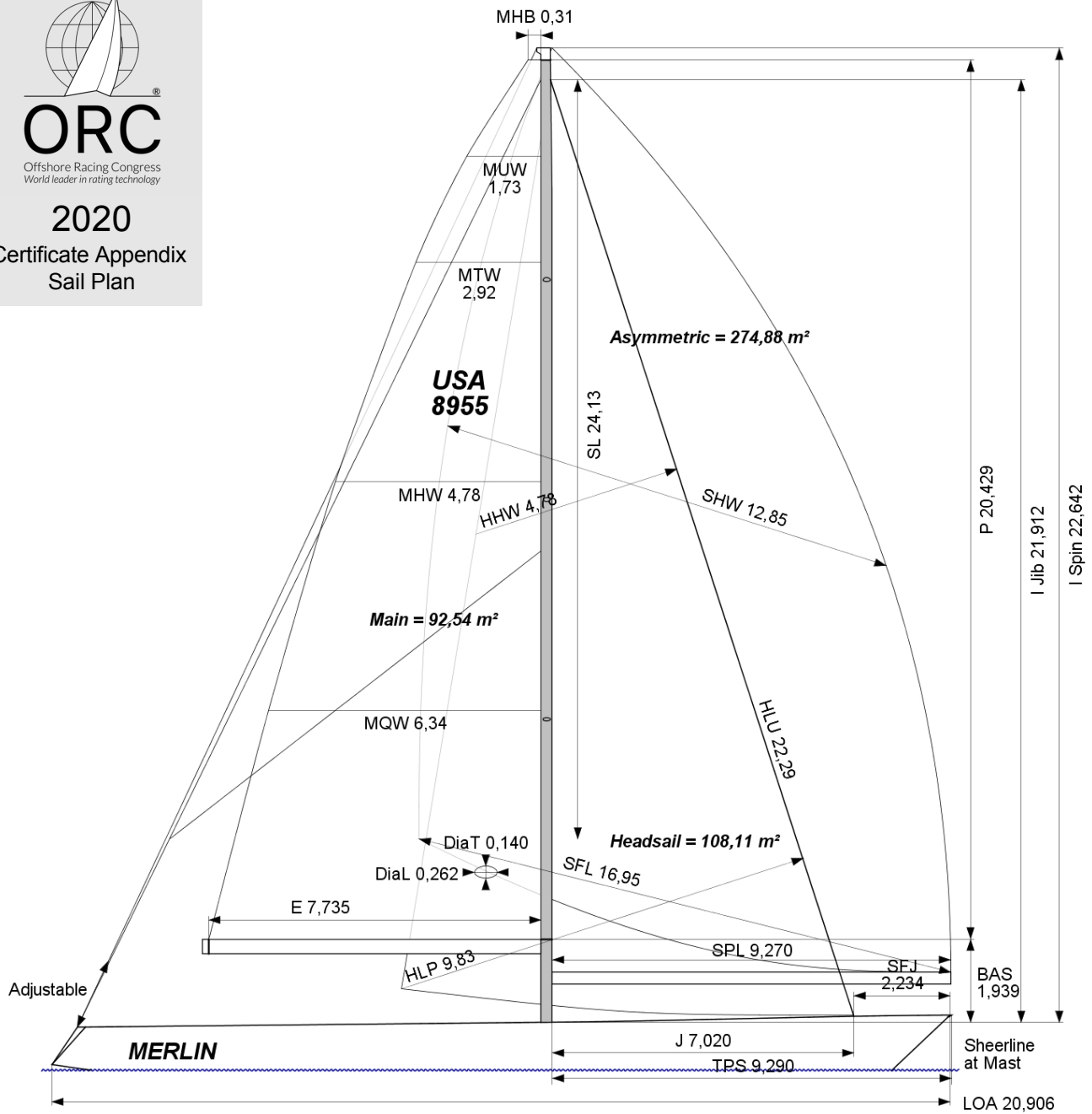
<b>HEADSAILS</b>												
Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HHB)												
<b>HHB</b>	<b>HUW</b>	<b>HTW</b>	<b>HHW</b>	<b>HQW</b>	<b>HLP</b>	<b>HLU</b>	<b>Area</b>	<b>Btn</b>	<b>Flying</b>	<b>Meas.Date</b>	<b>Material</b>	<b>Comment</b>
0.08	1.17	2.36	4.78	7.30	9.83	22.29	108.11	No			Unknow	



**ORC**

Offshore Racing Congress  
World leader in rating technology

**2020**  
Certificate Appendix  
Sail Plan



**SAILS INVENTORY**

**MAINSAIL (1)**

Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment
Main	0.31	1.73	2.92	4.78	6.34	92.55				Unknown	

**HEADSAILS (1)**

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Flying	Measurer	Meas.Date	Manufacture	Material	Comment
#1	0.08	1.17	2.36	4.78	7.30	9.83	22.29	140%	108.11	No					Unknown	

**SYMMETRIC SPINNAKERS (0)**

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
----	-----	-----	----	-----	-----	------	----------	-----------	-------------	----------	---------

**ASYMMETRIC SPINNAKERS (1)**

Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
A1	25.80	22.46	24.13	12.85	16.95	274.89	asy76				Unknown	