

BOAT	GPH	HULL
Name DEFIANCE Sail Nr NA 23	606.8	Length Overall 13.410m Maximum Beam 3.831m Displacement 12,334kg Draft 2.250m IMS Reg. Division Cruiser/Racer Dynamic Allowance 0.293% Fwd Accommodation Yes Hull Construction Cored Carbon Rudder No Crew Arm Extension 0.00
GENERAL		IMSL 11.312m VCGD -0.124m Sink 26.72kg/mm RL 8.928m VCGM -0.102m WS 37.85m² LSM0 11.255m Displacement/Length ratio 8.6510
Class NAVY 44 II PEDRICK Designer PEDRICK Builder PEARSON Series 01/2007, CIN 3 Age 01/2007 Age Allowance 0.390% Offset File US41723.off - 10/05/2017 13:40:36 Measurement by - 09/05/2018		



ORC
Offshore Racing Congress
World leader in rating technology

2019
ORC International
Certificate

Rating Office

Offshore
Racing
Congress

COPY ONLY for Rating

World Leader In Rating Technology

SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time on Distance	590.0			659.2		
Time on Time	1.0170			1.0240		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	698.7	536.6	478.6	902.6	665.7	571.6
Time on Time	0.9661	1.2579	1.4103	0.7478	1.0139	1.1809

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1018.4	850.3	756.3	706.7	681.6	668.7	661.3
52°	664.7	563.8	504.7	480.7	471.0	465.9	462.1
60°	628.1	535.2	487.3	468.0	458.5	453.6	449.5
75°	600.4	513.9	475.7	458.2	447.0	438.9	430.2
90°	605.2	515.7	474.7	455.8	443.0	432.3	414.6
110°	634.0	521.6	469.7	447.6	431.9	422.0	407.4
120°	648.1	532.8	474.3	449.5	431.6	414.9	392.4
135°	711.9	579.6	499.1	463.1	443.0	425.4	391.2
150°	840.6	667.9	566.1	499.0	464.5	445.3	412.2
Run VMG	970.7	771.2	653.6	571.6	519.4	479.0	438.7
Selected Courses							
Windward / Leeward	994.5	810.8	705.0	639.2	600.5	573.8	550.0
Circular Random	837.1	675.4	588.5	538.1	507.4	487.8	465.2
Coastal / Long Distance	992.2	761.2	632.8	555.8	516.2	487.0	444.6
Non Spinnaker	885.6	710.1	614.4	557.9	522.9	500.2	473.2

Certificate

Number **US6313**
ORC Ref **USAX028FW2A**
Issued On **29/05/2019**
VPP Ver. **2019 1.01**
Valid until **31/12/2019**

Crew Weight

Default 815kg
Maximum **815kg**
Minimum* **611kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring

ToD ToT
Non Spin GPH **634.0 0.9464**
Non Spin OSN **616.8 0.9727**

Sails Limitations

Headsails	Spinnakers
6	4

Dacron Sails

Class Division Length

CDL = 10.121

Storm Sails Areas

Heavy Weather Jib **42.48**
Storm Jib (JL=11.53) **15.74**
Storm Triesail **14.70**

Owner

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	43.5°	41.7°	42.1°	42.0°	41.0°	40.4°	40.3°
Beat VMG	3.54	4.23	4.76	5.09	5.28	5.38	5.44
52°	5.42	6.39	7.13	7.49	7.64	7.73	7.79
60°	5.73	6.73	7.39	7.69	7.85	7.94	8.01
75°	6.00	7.01	7.57	7.86	8.05	8.20	8.37
90°	5.95	6.98	7.58	7.90	8.13	8.33	8.68
110°	5.68	6.90	7.66	8.04	8.33	8.53	8.84
120°	5.55	6.76	7.59	8.01	8.34	8.68	9.17
135°	5.06	6.21	7.21	7.77	8.13	8.46	9.20
150°	4.28	5.39	6.36	7.21	7.75	8.08	8.73
Run VMG	3.71	4.67	5.51	6.30	6.93	7.52	8.21
Gybe Angles	145.1°	149.8°	150.0°	153.8°	163.2°	180.0°	180.0°

BOAT									
Name		DEFIANCE			Sail Nr		NA 23		
File		US6313			Data in		meters/kilograms		
RIG									
Forestay Tension		Aft			Spreaders		2		
Inner Stay		Adjustable			Runners		1		
Carbon Mast		No			Jumper Struts		None		
Taper Hollows		No			Jib Furler		No		
Fiber Rigging		No			Main Furler		No		
Lenticular Rigging		No			Without Backstay		No		
Articulated Bowspit		No							
P		15.240	E	5.511	MDT1	0.164	MW	0.204	
IG		17.538	J	5.493	MDL1	0.252	GO	0.266	
ISP		17.599	SFJ	0.000	MDT2	0.160	BD	0.195	
BAS		1.908	SPL	5.685	MDL2	0.204	MWT	370.50	
FSP		0.076	TPS	0.000	TL	2.680	MCG	6.875	

INCLINING TEST AND FREEBOARDS					
Inclining Test Current Inclining					
Flotation date		09/05/2018		SG	1.0060
FFM	1.438	FF	1.505	SFFP	0.998
FAM	1.075	FA	1.049	SAFP	12.815
W1	102.2	PD1	454.0	WD	14.584
W2	102.2	PD2	463.7	GSA	1.0
W3	102.2	PD3	471.6	RSA	1.0
W4	102.2	PD4	465.0	PLM	9000.0
LCF from stem on CL / on sheer				7.609 / 7.845	
Maximum beam station from stem				7.989	
RM Measured				253.2kg·m	
RM Default				256.5kg·m	
Limit of positive stability / Stab.Index				123.1° / 132.2	
Freeboard at mast at 5.493				1.233	



2019 IMS Measurement Certificate

MIZZEN RIG AND SAILS	
	N/A

PROPELLER							
Installation Type	Shaft exposed Feathering 2 blades					PRD	0.489
Twin Screw						PBW	0.152
						PIPA	0.0083
PSA	30.000	PHL	0.155	ST3	0.146	ESL	0.847
PSD	0.025	ST1	0.030	ST4	0.064		
PHD	0.073	ST2	0.122	ST5	0.226		

Certificate
 Number **US6313**
 ORC Ref **USAX028FW2A**
 Issued On **29/05/2019**
 VPP Ver. **2019 1.01**
 Valid until **31/12/2019**

COMMENTS	

MOVABLE BALLAST
N/A

CENTERBOARD	
	N/A

SAILS (Maximum Areas)							
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)
	0.120	1.02	1.89	3.32	4.43	47.48	48.22
Symmetric	SLU	SLE	SL	SHW	SFL	Formula	
	17.63	17.63	17.63	10.00	10.00	P/8 · (E + 2·MQW+ 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Asymmetric							
Not Available							SL · (SFL + 4·SHW) / 6

HEADSAILS

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
0.05	0.99	1.96	3.99	6.18	8.34	17.38	71.06					#1 Hank on Dacron Genoa

MEASUREMENT INVENTORY					
Measurer Date Comment					
<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG</i>	<i>Description</i>
a	Anchor	0.0	0.00		
<i>Id</i>	<i>Item</i>	<i>Weight Description</i>			

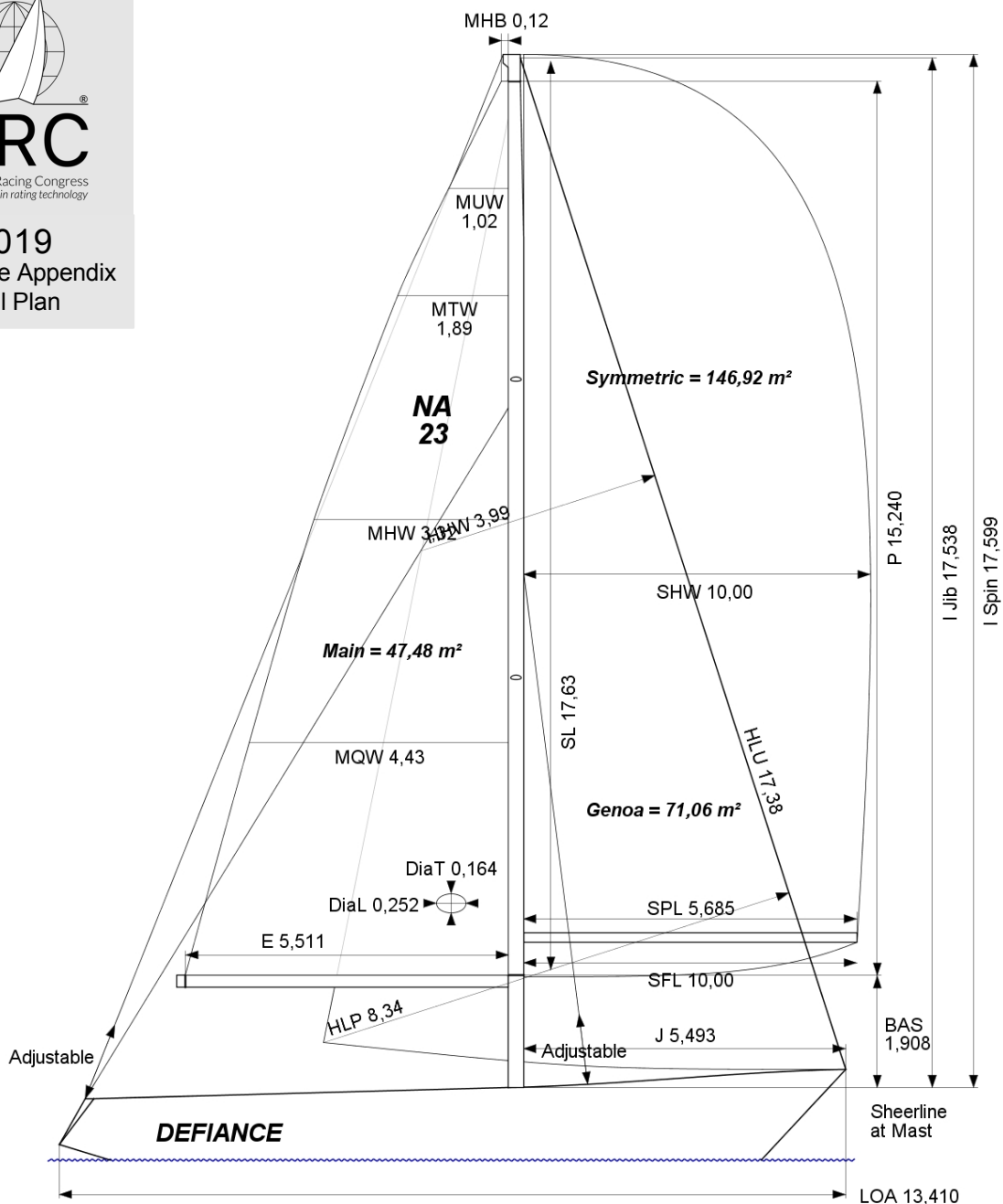
MEASUREMENT INVENTORY								
<i>Id</i>	<i>Item</i>	<i>Tank Use</i>	<i>Tank Type</i>	<i>Capcty</i>	<i>Dist.</i>	<i>VCG</i>	<i>Condtn</i>	<i>Description</i>
	Tank				0.00	-0.10	490.0	
<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG</i>	<i>Description</i>			



ORC

Offshore Racing Congress
World leader in rating technology

2019
Certificate Appendix
Sail Plan



SAILS INVENTORY

MAINSAIL (1)

Id	MHB	MUW	MTW	MHW	MQW	Area	Meas.Date	Manufacture	Material	Comment
2003404	0.12	1.02	1.89	3.32	4.43	47.49		JEFF TODD		2018 NAVAL

HEADSAILS (1)

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
2003393	0.05	0.99	1.96	3.99	6.18	8.34	17.38	152%	71.06					JEFF TODD		#1 Hank on Dacron

SYMMETRIC SPINNAKERS (1)

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
2003413	17.63	17.63	17.63	10.00	10.00	146.92			JEFF TODD		1.0 SPINNAKER

ASYMMETRIC SPINNAKERS (0)

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