



2020
ORC Club
Certificate

Rating Office
Hellenic Sailing Federation
Offshore Committee
Επιτροπή
Ανοικτής Θαλάσσης
Ελληνικής
Ιστιοπλοϊκής Ομοσπονδίας



Certificate
Number **00286**
Issued On **12/03/2020**
ORC Ref **03420000ERO**
VPP Ver. **2020 1.01**
Valid until **28/02/2021**

Crew Weight

Default	853kg
Maximum	800kg
Minimum*	600kg

**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring

ToD	ToT
Non Spin GPH 625.9	0.9586
Non Spin OSN 607.2	0.9881

Sails Limitations

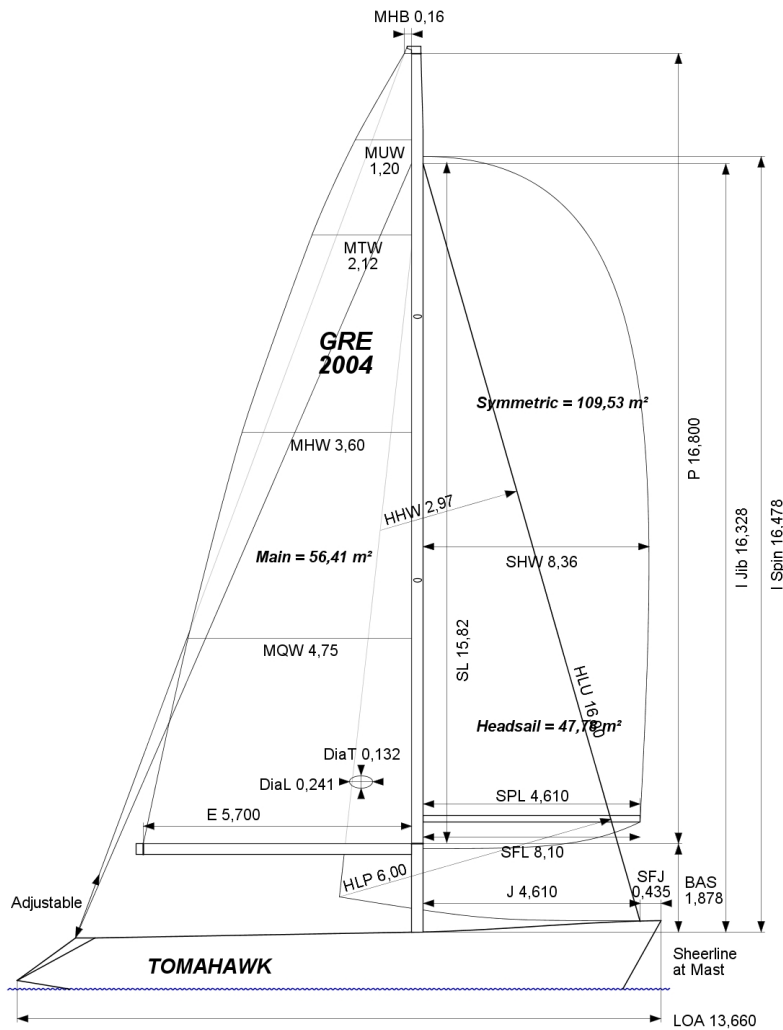
Headsails **6** Spinnakers **4**

Spinnaker configuration
Symmetric: **Yes 109.53**
Asymmetric: **No**
Flying H/S: **No**
Spin. Pole: **Yes**

Class Division Length
CDL = **10.614**

Stability (Measured)
Limit Positive Stab.: **105.0°**
Stability Index: **110.4**

Owner



BOAT Name TOMAHAWK Sail Nr GRE-2004	GPH 600.1	HULL Data File GR2004 LOA 13.660m Offset File GR0022.BOF MB 4.206m Displacement 10,910kg Draft 2.221m
CLASS Class FIRST 45F5 Designer BRUCE FARR Builder BENETEAU Series 01/1990 Age Date 01/1993 Age Allowance 0.487%		IMS Division Cruiser/Racer Dynamic All. 0.325% Plan Review Construction Solid Fiber Rigging No Aramid Core No Crew Arm Ex Carbon Rudder No Light Stanchions No
COMMENTS SHALLOW DRAFT KEEL		IMSL 11.816m VCGD 0.227m Sink 28.17kg/mm RL 9.420m VCGM 0.219m WS 37.03m² LSM0 11.621m Displacement/Length ratio 6.9518 Water Ballast 0 Trim Tab No BLR Index 0.0000
PROPELLER Installation Shaft exposed PRD 0.470 Type Feathering 3 blades PBW 0.155 PIPA 0.0067		CENTERBOARD N/A

SCORING OPTIONS

	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time on Distance	582.8			652.9		
Time on Time	1.0295			1.0338		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	698.2	528.7	467.9	908.4	659.2	562.3
Time on Time	0.9668	1.2766	1.4426	0.7431	1.0240	1.2005

BOAT	
Name TOMAHAWK File GR2004	Sail Nr GRE-2004 Data in meters/kilograms
RIG	
Forestay Tension Aft	Spreaders 2
Inner Stay None Fitted	Runners/Checkstays 1
Carbon Mast No	Jib Furler No
Fiber Rigging No	Main Furler No
Non-Circular Rigging No	
Articulated Bowsprit No	
P 16.800	E 5.700 MDT1 0.132 MW 0.241
IG 16.328	J 4.610 MDL1 0.241 GO 0.265
ISP 16.478	SFJ 0.435 MDT2 0.132 BD 0.225
BAS 1.878	SPL 4.610 MDL2 0.195 MWT
FSD 0.042	TPS TL 1.650 MCG

INCLINING TEST AND FREEBOARDS		
Inclining Test Current Inclining		
Flotation date 20/04/2005	SG 1.0280	
FFM 1.434	FF 1.429	SFFP 0.633
FAM 1.084	FA 1.091	SAFP 12.013
W1 111.8	PD1 268.0	WD 13.480
W2 111.8	PD2 268.0	GSA 38.5
W3 111.8	PD3 268.0	RSA 5674.5
W4 111.8	PD4 268.0	PLM 2462.0
LCF from stem on CL / on sheer		7.344 / 7.641
Maximum beam station from stem		8.435
RM Measured		240.7kg-m
RM Default		267.3kg-m
Limit of positive stability / Stab.Index		105.0° / 110.4
Freeboard at mast at 5.045		1.211



ORC
Offshore Racing Congress
World leader in rating technology

2020
Measurements
Datasheet

MIZZEN RIG AND SAILS	
N/A	

PROPELLER		
Installation Shaft exposed	PRD 0.470	
Type Feathering 3 blades	PBW 0.155	
Twin Screw No	PIPA 0.0067	
PSA 16.260	PHL 0.145 ST3 0.081 ESL 1.166	
PSD 0.030	ST1 0.016 ST4 0.065	
PHD 0.083	ST2 0.081 ST5 0.250	

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COMMENTS	
SHALLOW DRAFT KEEL	

MOVABLE BALLAST	
N/A	

CENTERBOARD	
N/A	

SAILS INVENTORY																
MAINSAIL (1)																
Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
ORC	0.16	1.20	2.12	3.60	4.75	56.41					* Copied from legacy					
HEADSAILS (3)																
Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Flying	Measurer	Meas.Date	Manufacture	Material	Comment
1	0.06	0.73	1.45	2.97	4.50	6.00	16.00	130%	47.78	No			20/06/2016		Dacron	
J2b	0.09	0.73	1.45	2.92	4.48	6.01	15.70	130%	46.69	No			28/04/2010	KAKITSIS	Pentex	Older modified sail
J2	0.07	0.69	1.35	2.82	4.42	6.04	15.88	131%	46.37	No			17/03/2010	KAKITSIS	Dacron	
SYMMETRIC SPINNAKERS (1)																
Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
ORC	15.82	15.82	15.82	8.36	8.10	109.53					* Copied from legacy *					
ASYMMETRIC SPINNAKERS (0)																
Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment				

MEASUREMENT INVENTORY				
Measurer				
Date 20/04/2005				
Comment				
Internal Ballast total = 0.0				
Id	Item	Weight	Distance	VCG Description
2a	Anchor	16.0	10.60	Danforth
2b	Anchor	15.0	10.60	Danforth
2aa	Chain	20.0	10.60	
2bb	Chain	25.0	10.60	
4	Tools	10.0	5.40	
Id	Item	Maker	Model	
5	Engine	PERKINS	Prima 50 Hp	
Id	Item	Weight	Description	
8	Deck-Gear	10.0		

MEASUREMENT INVENTORY								
Id	Item	Tank Use	Tank Type	Capcty	Dist.	VCG	Condtn	Description
6a	Tank Fuel		St. Steel	155.0	10.30		0-0	Empty
6b	Tank Water		FBP	140.0	5.80		0-0	Empty
6c	Tank Water		FBP	140.0	5.80		0-0	Empty
6d	Tank Water		FBP	115.0	6.60		0-0	Empty
6e	Tank Water		FBP	115.0	6.60		0-0	Empty
Id	Item	Weight	Distance	VCG Description				
3a	Battery	46.0	10.30	2 x 120 Ah				
3b	Battery	22.0	10.60	1 x 105 Ah				
9a	Misc	60.0	6.80	Boiler				
9b	Misc	115.0	12.50	Generator				

2020

ORC Club Certificate Appendix

BOAT	
Name	TOMAHAWK
Sail Nr	GRE-2004
Certificate Number	00286
Issued On	12/03/2020

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1020.7	841.2	741.2	688.0	665.9	655.6	650.3
52°	662.6	557.3	497.1	471.6	461.8	457.2	454.2
60°	623.4	528.9	479.1	458.6	448.7	444.1	440.7
75°	594.5	507.2	466.8	447.9	436.1	427.6	419.4
90°	600.6	509.1	464.7	443.2	431.2	419.4	400.3
110°	622.3	511.3	459.4	436.1	418.5	402.9	385.7
120°	643.8	527.2	466.7	440.2	421.6	403.6	372.6
135°	718.8	582.2	500.3	458.4	436.3	418.1	381.9
150°	858.1	675.9	570.0	500.9	460.4	438.7	403.9
Run VMG	990.9	780.4	658.1	574.8	517.4	474.0	430.0
Selected Courses							
Windward / Leeward	1005.8	810.8	699.6	631.4	591.6	564.8	540.1
Circular Random	834.9	670.6	581.6	529.6	497.8	477.4	453.7
Coastal / Long Distance	1004.3	760.7	626.8	546.9	506.4	476.8	431.8
Non Spinnaker	882.0	703.6	606.0	548.2	512.4	489.4	461.9

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°	41.8°	41.3°	40.9°	40.1°	39.8°	39.4°
Beat VMG	3.53	4.28	4.86	5.23	5.41	5.49	5.54
52°	5.43	6.46	7.24	7.63	7.80	7.87	7.93
60°	5.77	6.81	7.51	7.85	8.02	8.11	8.17
75°	6.05	7.10	7.71	8.04	8.25	8.42	8.58
90°	5.99	7.07	7.75	8.12	8.35	8.58	8.99
110°	5.78	7.04	7.84	8.26	8.60	8.94	9.33
120°	5.59	6.83	7.71	8.18	8.54	8.92	9.66
135°	5.01	6.18	7.20	7.85	8.25	8.61	9.43
150°	4.20	5.33	6.32	7.19	7.82	8.21	8.91
Run VMG	3.63	4.61	5.47	6.26	6.96	7.60	8.37
Gybe Angles	144.0°	149.0°	151.5°	153.5°	162.0°	180.0°	180.0°