



PERFORMANCE PREDICTION



DESIGN #468
Farr 395
Shallow keel version

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Copyright March 9, 2004

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DESCRIPTION OF SYMBOLS IN VPP OUTPUT

The accompanying document contains a large amount information about the predicted performance of your boat. To allow this document to be used as a valuable racing tool we have prepared the following explanation of the important terms it contains.

General Terms:

Vt or TWS	True Wind Speed
Bt or TWA	True Wind Angle
V or Vs	Boat Speed
VMG	Boat Velocity Made Good
HEEL	Heel Angle
REEF	Measure of Reduction in Sail Area
FLAT	Measure of Reduction in Sail Lift
Va, AWS	Apparent Wind Speed
Ba, AWA	Apparent Wind Angle
Lee	Leeway Angle
Sail	Sail Combination Designator (Upwind or Downwind)
Flot	Flotation Designator (Varies Only For Water Ballasted Boats)

VPP Polar diagram

This is a graphical representation of the boats performance across a range of windspeeds and true wind directions. Optimal upwind and downwind conditions are marked as small rectangles on the boat speed contours for each windspeed.

Best Boatspeeds

The upper portion of this page gives a numerical representation of the polar diagram. Boatspeeds in knots are given for a series of true windspeeds at masthead height, across a range of true wind angles. All boatspeeds and windspeeds are given in knots. The shaded cells lie beyond the upwind and downwind optimum points. The two tables on the lower portion of the page provide a ready reference of useful details about the optimum upwind and downwind sailing conditions as a function of the true windspeeds (Vt's) across the top of the page. In addition to indicating the optimum upwind and downwind boat speeds in knots, they are also expressed in seconds/mile and in seconds/boat length. VMG is also expressed in seconds/mile.

Course Times

This page shows the predicted boat performance over a series of 1.0 nautical mile courses in various windspeeds. Times around the course are expressed as seconds. The courses reflect five different course conditions: - LEEWARD, LINEAR RANDOM (LR), WINDWARD-LEEWARD (WL), WINDWARD and CIRCULAR-RANDOM (CR).

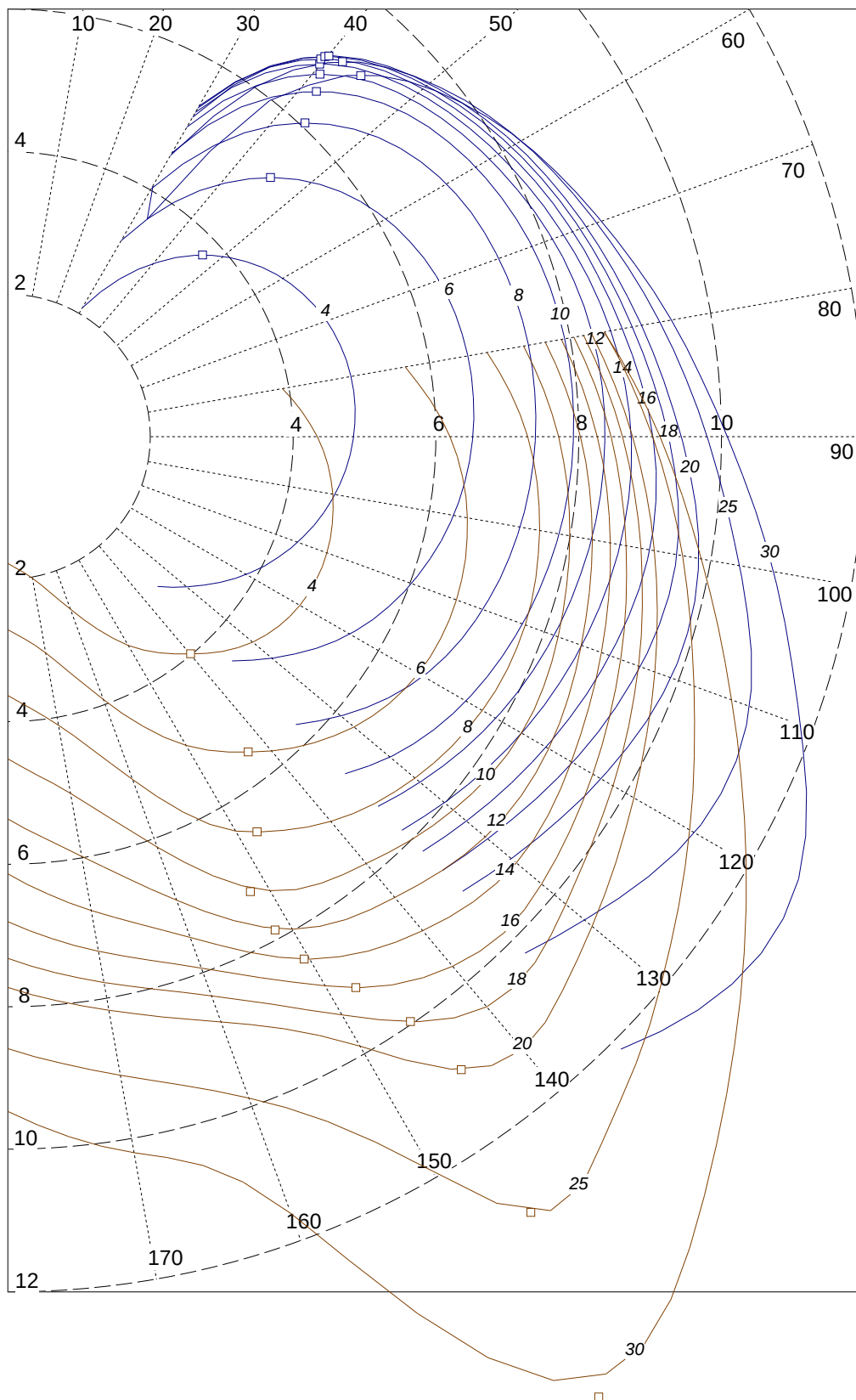
Times for 1 nm (secs)

This page is similar to the Best Boatspeeds page in that it represents the boatspeeds for a series of true windspeeds and true wind angles. Boatspeeds are expressed as seconds/nautical mile. Shaded areas again depict the off optimum conditions. Optimum upwind and downwind values, in terms of VMG, are presented underneath the table.

Best Performance

This page is a detailed representation of the polar diagram showing a list of predicted performance variables for each windspeed over the range of true wind angles. All of those items listed in the "General Terms" section are listed and optimum upwind and downwind settings are included in bold type.

**Farr 395 OD Cruiser/Racer Yacht - SHALLOW KEEL
For Carroll Marine, Ltd.**



Best Boatspeeds (kt)

	4	6	8	10	12	14	16	18	20	25	30
30.0	2.09	3.18	4.02	4.61	5.02	5.26	5.36	5.33	5.18	4.56	4.07
33.0	2.46	3.70	4.62	5.27	5.67	5.89	5.99	5.97	5.94	5.44	3.70
36.0	2.79	4.13	5.12	5.78	6.15	6.36	6.46	6.48	6.47	6.18	5.35
39.0	3.08	4.51	5.56	6.19	6.53	6.72	6.82	6.86	6.87	6.70	6.20
42.0	3.35	4.85	5.92	6.52	6.84	7.01	7.10	7.15	7.17	7.09	6.77
45.0	3.59	5.14	6.22	6.80	7.08	7.23	7.31	7.37	7.40	7.37	7.18
50.0	3.94	5.56	6.61	7.14	7.37	7.50	7.60	7.66	7.71	7.73	7.64
60.0	4.45	6.12	7.10	7.57	7.79	7.94	8.05	8.14	8.21	8.30	8.30
70.0	4.76	6.43	7.32	7.81	8.12	8.29	8.42	8.53	8.62	8.78	8.85
80.0	4.88	6.54	7.40	7.92	8.32	8.58	8.74	8.88	9.01	9.28	9.44
90.0	4.85	6.51	7.39	7.93	8.36	8.73	9.04	9.25	9.43	9.80	10.08
100.0	4.65	6.54	7.56	7.99	8.31	8.71	9.13	9.52	9.83	10.41	10.89
110.0	4.76	6.69	7.71	8.20	8.55	8.85	9.13	9.43	9.88	11.06	11.81
120.0	4.73	6.64	7.67	8.31	8.75	9.11	9.46	9.79	10.13	11.11	12.73
130.0	4.48	6.33	7.45	8.15	8.73	9.30	9.76	10.20	10.68	11.95	13.29
135.0	4.25	6.07	7.27	7.99	8.60	9.22	9.83	10.44	10.99	12.44	14.04
140.0	3.98	5.75	7.04	7.81	8.44	9.04	9.70	10.44	11.22	12.94	14.86
150.0	3.38	5.00	6.39	7.35	7.97	8.46	8.89	9.36	9.87	11.89	15.29
160.0	2.57	3.92	5.11	6.12	6.92	7.47	7.93	8.34	8.74	9.87	11.59
170.0	2.02	3.08	4.11	5.08	5.98	6.75	7.33	7.77	8.17	9.09	10.20
180.0	1.77	2.70	3.63	4.51	5.36	6.13	6.80	7.32	7.73	8.58	9.46
Up.Vs(fts)	3.74	5.18	6.06	6.49	6.71	6.81	6.88	6.94	6.98	7.05	7.08
Up.Vs(s/m)	963.7	695.5	593.8	554.3	536.5	528.3	523.2	518.5	515.5	510.8	508.3
Up.Vs(s/L)	6.1	4.4	3.7	3.5	3.4	3.3	3.3	3.3	3.2	3.2	3.2
Up.Bt	47.0	45.4	43.4	41.8	40.7	39.9	39.6	39.8	40.1	41.7	44.3
Up.Vmg(fts)	2.55	3.64	4.40	4.85	5.09	5.23	5.30	5.33	5.34	5.26	5.07
Up.Vmg(s/m)	1412.2	989.7	817.3	743.0	707.7	688.5	679.3	674.8	674.1	684.4	710.1
Up.Heel	3.0	6.6	11.4	16.4	19.0	20.9	21.8	21.9	22.2	22.6	22.8
Up.Reef	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.90	0.85	0.73	0.64
Up.Flat	1.00	1.00	1.00	0.92	0.78	0.66	0.61	0.63	0.63	0.68	0.75
Up.Va	7.09	10.31	13.04	15.35	17.45	19.46	21.41	23.36	25.27	29.95	34.47
Up.Ba	24.3	24.3	24.4	24.6	25.1	25.5	26.2	27.2	28.2	30.9	34.1
Up.Leewy	3.16	3.41	3.97	4.50	4.68	4.87	5.08	5.27	5.50	6.14	6.76
Dn.Vs(fts)	3.98	5.56	6.55	7.23	7.87	8.42	9.14	9.96	10.92	13.12	15.82
Dn.Vs(s/m)	904.2	647.6	549.5	497.7	457.6	427.4	393.9	361.5	329.8	274.4	227.6
Dn.Vs(s/L)	5.7	4.1	3.5	3.1	2.9	2.7	2.5	2.3	2.1	1.7	1.4
Dn.Bt	139.9	142.7	147.8	151.9	151.5	150.4	147.8	145.5	144.4	146.0	148.4
Dn.Vmg(fts)	3.05	4.42	5.54	6.38	6.92	7.33	7.73	8.21	8.88	10.88	13.48
Dn.Vmg(s/m)	1181.6	814.2	649.5	564.0	520.5	491.3	465.8	438.7	405.5	330.9	267.2
Dn.Heel	1.1	2.0	2.2	2.1	2.8	3.7	5.9	9.1	12.8	18.5	22.3
Dn.Reef	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Dn.Flat	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Dn.Va	2.73	3.72	4.27	4.96	6.31	7.85	9.56	11.19	12.55	15.28	17.50
Dn.Ba	70.3	77.8	92.9	108.7	115.2	118.6	117.4	115.8	115.2	119.9	123.8
Dn.Leewy	0.84	0.72	0.55	0.44	0.48	0.54	0.69	0.82	0.85	0.64	0.40

Course Times

	<u>Leeward</u> <u>1.00 nm.</u>	<u>LR</u> <u>1.00 nm.</u>	<u>WL</u> <u>1.00 nm.</u>	<u>Windward</u> <u>1.00 nm.</u>	<u>CR</u> <u>1.00 nm.</u>
4.0	1181.6	930.0	1296.9	1412.2	976.7
6.0	814.2	661.6	902.0	989.7	690.0
8.0	649.5	557.7	733.4	817.3	576.3
10.0	564.0	509.8	653.5	743.0	524.7
12.0	520.5	482.8	614.1	707.7	497.0
14.0	491.3	463.6	589.9	688.5	478.3
16.0	465.8	448.1	572.5	679.3	464.2
18.0	438.7	433.8	556.8	674.8	452.0
20.0	405.5	418.7	539.8	674.1	439.9
25.0	330.9	384.8	507.6	684.4	417.0
30.0	267.2	352.7	488.6	710.1	402.3

Times for 1 nm (secs)

	4	6	8	10	12	14	16	18	20	25	30
30.0	1719.1	1130.7	895.9	781.6	716.8	684.5	672.1	675.9	694.9	789.1	885.4
33.0	1462.4	973.7	779.5	683.2	635.3	611.5	601.0	602.7	606.2	661.3	972.9
36.0	1290.8	871.2	702.5	622.6	585.6	566.2	557.3	555.2	556.7	582.8	673.5
39.0	1167.0	798.1	647.6	581.8	551.2	535.3	527.8	524.4	524.2	537.6	580.7
42.0	1074.1	742.9	608.4	552.0	526.4	513.5	507.0	503.3	502.1	507.8	531.8
45.0	1002.1	699.8	579.0	529.8	508.6	498.1	492.2	488.5	486.6	488.6	501.2
50.0	914.0	647.7	544.4	504.2	488.3	479.7	473.9	469.8	467.2	465.8	471.4
60.0	809.4	588.6	507.2	475.6	462.1	453.6	447.1	442.2	438.5	433.5	433.5
70.0	757.1	560.3	491.9	460.7	443.3	434.4	427.5	422.0	417.6	410.1	406.9
80.0	737.3	550.0	486.2	454.4	432.9	419.8	412.0	405.2	399.4	388.1	381.4
90.0	743.0	552.7	487.1	454.2	430.4	412.3	398.3	389.0	381.6	367.4	357.2
100.0	773.7	550.6	476.0	450.5	433.1	413.3	394.3	378.3	366.3	346.0	330.5
110.0	757.0	538.3	466.8	438.8	421.1	406.8	394.1	381.9	364.2	325.6	304.7
120.0	761.8	542.1	469.1	433.2	411.5	395.0	380.5	367.8	355.6	324.1	282.7
130.0	803.9	568.6	483.4	442.0	412.3	387.1	368.8	352.9	336.9	301.4	270.9
135.0	846.3	593.2	495.1	450.3	418.4	390.3	366.1	344.9	327.7	289.3	256.4
140.0	905.1	626.0	511.2	460.8	426.6	398.1	371.3	344.9	321.0	278.2	242.3
150.0	1066.4	719.8	563.6	489.7	451.5	425.5	404.8	384.4	364.7	302.7	235.5
160.0	1398.3	918.0	704.0	588.0	520.4	481.7	453.9	431.5	412.1	364.7	310.5
170.0	1782.6	1169.5	876.3	708.4	602.4	533.6	491.3	463.2	440.7	396.0	352.9
180.0	2029.2	1331.3	992.2	797.4	671.8	587.3	529.3	491.9	466.0	419.4	380.4
Up	1412.2	989.7	817.3	743.0	707.7	688.5	679.3	674.8	674.1	684.4	710.1
Dn	1181.6	814.2	649.5	564.0	520.5	491.3	465.8	438.7	405.5	330.9	267.2

Equivalent ILC Average (using IMS formula): 640.17

Best Performance

	TWS	TWA	V	VMG	Heel	Reef	Flat	AWS	AWA	Lee	Sail	Flot
	4.0	30.0	2.094	1.814	1.9	1.000	1.000	5.91	19.8	6.56	Up	46ew
	4.0	33.0	2.462	2.065	2.2	1.000	1.000	6.21	20.5	5.33	Up	46ew
	4.0	36.0	2.789	2.256	2.4	1.000	1.000	6.47	21.3	4.56	Up	46ew
	4.0	39.0	3.085	2.397	2.6	1.000	1.000	6.68	22.1	4.03	Up	46ew
	4.0	42.0	3.352	2.491	2.8	1.000	1.000	6.87	22.9	3.63	Up	46ew
	4.0	45.0	3.592	2.540	2.9	1.000	1.000	7.01	23.7	3.33	Up	46ew
OptUp >	4.0	47.0	3.736	2.549	3.0	1.000	1.000	7.09	24.3	3.16	Up	46ew
	4.0	50.0	3.939	2.532	3.1	1.000	1.000	7.19	25.2	2.93	Up	46ew
	4.0	60.0	4.448	2.224	3.3	1.000	1.000	7.32	28.2	2.39	Up	46ew
	4.0	70.0	4.755	1.626	3.1	1.000	1.000	7.18	31.5	2.00	Up	46ew
	4.0	80.0	4.883	0.848	2.8	1.000	1.000	6.83	35.2	1.69	Up	46ew
	4.0	90.0	4.845	-0.000	2.3	1.000	1.000	6.28	39.5	1.43	Up	46ew
	4.0	100.0	4.653	-0.808	1.7	1.000	1.000	5.58	44.8	1.18	Up	46ew
	4.0	110.0	4.756	-1.627	3.4	1.000	1.000	5.06	47.9	1.72	Dn	46ew
	4.0	120.0	4.725	-2.363	2.8	1.000	1.000	4.40	51.8	1.47	Dn	46ew
	4.0	130.0	4.478	-2.878	2.0	1.000	1.000	3.61	58.1	1.19	Dn	46ew
OptDn >	4.0	135.0	4.254	-3.008	1.6	1.000	1.000	3.17	63.2	1.01	Dn	46ew
	4.0	140.0	3.977	-3.047	1.1	1.000	1.000	2.73	70.4	0.83	Dn	46ew
	4.0	150.0	3.376	-2.923	0.5	1.000	1.000	2.00	92.5	0.50	Dn	46ew
	4.0	160.0	2.575	-2.419	0.1	1.000	1.000	1.81	130.9	0.21	Dn	46ew
	4.0	170.0	2.020	-1.989	0.0	1.000	1.000	2.04	160.1	0.07	Dn	46ew
	4.0	180.0	1.774	-1.774	-0.0	1.000	1.000	2.23	180.0	-0.00	Dn	46ew
	6.0	30.0	3.184	2.757	4.5	1.000	1.000	8.90	19.6	6.42	Up	46ew
	6.0	33.0	3.697	3.101	5.0	1.000	1.000	9.32	20.5	5.29	Up	46ew
	6.0	36.0	4.132	3.343	5.5	1.000	1.000	9.65	21.3	4.60	Up	46ew
	6.0	39.0	4.511	3.505	5.9	1.000	1.000	9.91	22.3	4.11	Up	46ew
	6.0	42.0	4.846	3.601	6.2	1.000	1.000	10.12	23.2	3.74	Up	46ew
	6.0	45.0	5.144	3.638	6.5	1.000	1.000	10.29	24.2	3.44	Up	46ew
OptUp >	6.0	45.4	5.176	3.637	6.6	1.000	1.000	10.31	24.3	3.41	Up	46ew
	6.0	50.0	5.558	3.573	6.8	1.000	1.000	10.46	25.9	3.05	Up	46ew
	6.0	60.0	6.116	3.058	6.9	1.000	1.000	10.47	29.5	2.50	Up	46ew
	6.0	70.0	6.425	2.197	6.4	1.000	1.000	10.16	33.5	2.09	Up	46ew
	6.0	80.0	6.545	1.137	5.5	1.000	1.000	9.60	37.8	1.75	Up	46ew
	6.0	90.0	6.514	-0.000	4.5	1.000	1.000	8.84	42.6	1.46	Up	46ew
	6.0	100.0	6.538	-1.135	8.7	1.000	1.000	8.02	46.7	2.15	Dn	46ew
	6.0	110.0	6.688	-2.287	7.8	1.000	1.000	7.26	50.3	1.85	Dn	46ew
	6.0	120.0	6.641	-3.320	6.3	1.000	1.000	6.32	54.8	1.54	Dn	46ew
	6.0	130.0	6.331	-4.069	4.3	1.000	1.000	5.21	61.6	1.18	Dn	46ew
	6.0	135.0	6.069	-4.291	3.3	1.000	1.000	4.61	66.7	1.00	Dn	46ew
OptDn >	6.0	142.7	5.559	4.421	2.0	1.000	1.000	3.72	77.8	0.72	Dn	46ew
	6.0	150.0	5.001	-4.331	1.0	1.000	1.000	3.01	93.7	0.49	Dn	46ew
	6.0	160.0	3.922	-3.685	0.2	1.000	1.000	2.68	129.9	0.20	Dn	46ew
	6.0	170.0	3.078	-3.031	0.0	1.000	1.000	3.02	159.8	0.07	Dn	46ew
	6.0	180.0	2.704	-2.704	-0.0	1.000	1.000	3.30	180.0	-0.00	Dn	46ew

Best Performance (cont)

	TWS	TWA	V	VMG	Heel	Reef	Flat	AWS	AWA	Lee	Sail	Flot
OptUp >	8.0	30.0	4.018	3.480	7.6	1.000	0.949	11.64	19.9	6.58	Up	46ew
	8.0	33.0	4.619	3.873	9.0	1.000	0.999	12.12	20.8	5.77	Up	46ew
	8.0	36.0	5.125	4.146	9.9	1.000	1.000	12.49	21.8	5.03	Up	46ew
	8.0	39.0	5.559	4.320	10.6	1.000	1.000	12.77	22.8	4.51	Up	46ew
	8.0	42.0	5.917	4.397	11.2	1.000	1.000	12.97	23.9	4.12	Up	46ew
	8.0	43.4	6.062	4.405	11.4	1.000	1.000	13.04	24.4	3.97	Up	46ew
	8.0	45.0	6.218	4.397	11.6	1.000	1.000	13.10	25.0	3.82	Up	46ew
	8.0	50.0	6.612	4.250	11.9	1.000	1.000	13.20	27.0	3.41	Up	46ew
	8.0	60.0	7.098	3.549	11.4	1.000	1.000	13.01	31.5	2.81	Up	46ew
	8.0	70.0	7.319	2.503	9.9	1.000	1.000	12.49	36.4	2.34	Up	46ew
	8.0	80.0	7.405	1.286	8.2	1.000	1.000	11.75	41.6	1.94	Up	46ew
	8.0	90.0	7.391	-0.000	6.6	1.000	1.000	10.85	47.1	1.58	Up	46ew
	8.0	100.0	7.563	-1.313	18.3	1.000	1.000	9.70	50.5	2.76	Dn	46ew
	8.0	110.0	7.712	-2.638	14.9	1.000	1.000	8.81	55.6	2.26	Dn	46ew
	8.0	120.0	7.675	-3.837	10.3	1.000	1.000	7.74	61.7	1.72	Dn	46ew
OptDn >	8.0	130.0	7.447	-4.787	6.6	1.000	1.000	6.51	69.3	1.23	Dn	46ew
	8.0	135.0	7.272	-5.142	5.1	1.000	1.000	5.86	74.0	1.02	Dn	46ew
	8.0	140.0	7.043	-5.395	3.8	1.000	1.000	5.21	79.9	0.82	Dn	46ew
	8.0	147.8	6.551	5.543	2.2	1.000	1.000	4.27	92.9	0.55	Dn	46ew
	8.0	150.0	6.387	-5.531	1.8	1.000	1.000	4.03	97.7	0.49	Dn	46ew
	8.0	160.0	5.114	-4.805	0.4	1.000	1.000	3.64	131.3	0.20	Dn	46ew
	8.0	170.0	4.108	-4.046	0.1	1.000	1.000	4.02	159.8	0.07	Dn	46ew
	8.0	180.0	3.628	-3.628	-0.0	1.000	1.000	4.37	180.0	-0.00	Dn	46ew
	10.0	30.0	4.606	3.989	11.2	1.000	0.889	14.14	20.3	7.01	Up	46ew
	10.0	33.0	5.270	4.419	13.1	1.000	0.909	14.65	21.2	5.98	Up	46ew
OptUp >	10.0	36.0	5.782	4.678	14.4	1.000	0.909	14.99	22.3	5.27	Up	46ew
	10.0	39.0	6.187	4.809	15.5	1.000	0.910	15.22	23.5	4.80	Up	46ew
	10.0	41.8	6.494	4.845	16.4	1.000	0.918	15.35	24.6	4.50	Up	46ew
	10.0	42.0	6.522	4.846	16.5	1.000	0.918	15.36	24.7	4.47	Up	46ew
	10.0	45.0	6.795	4.805	17.4	1.000	0.932	15.42	25.9	4.24	Up	46ew
	10.0	50.0	7.140	4.589	18.5	1.000	0.964	15.39	28.2	3.98	Up	46ew
	10.0	60.0	7.570	3.785	17.8	1.000	1.000	15.03	33.3	3.38	Up	46ew
	10.0	70.0	7.814	2.673	14.5	1.000	1.000	14.46	39.0	2.72	Up	46ew
	10.0	80.0	7.922	1.376	11.4	1.000	1.000	13.66	45.0	2.20	Up	46ew
	10.0	90.0	7.926	-0.000	8.8	1.000	1.000	12.67	51.3	1.76	Up	46ew
OptDn >	10.0	100.0	7.992	-1.388	20.0	0.896	0.991	11.17	55.9	2.85	Dn	46ew
	10.0	110.0	8.204	-2.806	20.5	0.965	1.000	10.02	61.5	2.56	Dn	46ew
	10.0	120.0	8.311	-4.155	15.3	1.000	1.000	8.98	68.4	1.93	Dn	46ew
	10.0	130.0	8.145	-5.236	9.1	1.000	1.000	7.76	77.2	1.34	Dn	46ew
	10.0	135.0	7.995	-5.653	6.9	1.000	1.000	7.08	82.5	1.10	Dn	46ew
	10.0	140.0	7.813	-5.985	5.2	1.000	1.000	6.40	88.6	0.88	Dn	46ew
	10.0	150.0	7.352	-6.367	2.5	1.000	1.000	5.16	104.7	0.51	Dn	46ew
	10.0	151.9	7.233	6.382	2.1	1.000	1.000	4.96	108.7	0.44	Dn	46ew
	10.0	160.0	6.123	-5.754	0.6	1.000	1.000	4.73	133.8	0.21	Dn	46ew
	10.0	170.0	5.082	-5.005	0.1	1.000	1.000	5.07	160.0	0.07	Dn	46ew
	10.0	180.0	4.514	-4.514	-0.0	1.000	1.000	5.49	180.0	-0.00	Dn	46ew

Best Performance (cont)

	TWS	TWA	V	VMG	Heel	Reef	Flat	AWS	AWA	Lee	Sail	Flot
OptUp >	12.0	30.0	5.022	4.350	14.3	1.000	0.773	16.47	20.7	7.07	Up	46ew
	12.0	33.0	5.666	4.752	16.0	1.000	0.768	16.94	21.8	5.93	Up	46ew
	12.0	36.0	6.147	4.973	17.5	1.000	0.771	17.22	23.0	5.31	Up	46ew
	12.0	39.0	6.531	5.076	18.5	1.000	0.772	17.40	24.3	4.85	Up	46ew
	12.0	40.7	6.710	5.087	19.0	1.000	0.777	17.45	25.1	4.68	Up	46ew
	12.0	42.0	6.839	5.082	19.4	1.000	0.780	17.48	25.7	4.55	Up	46ew
	12.0	45.0	7.079	5.005	20.1	1.000	0.791	17.49	27.1	4.32	Up	46ew
	12.0	50.0	7.372	4.739	20.9	1.000	0.820	17.36	29.7	4.07	Up	46ew
	12.0	60.0	7.791	3.895	21.8	1.000	0.907	16.83	35.0	3.72	Up	46ew
	12.0	70.0	8.120	2.777	21.0	1.000	1.000	16.13	40.7	3.29	Up	46ew
	12.0	80.0	8.316	1.444	15.9	1.000	1.000	15.41	47.5	2.53	Up	46ew
	12.0	90.0	8.364	-0.000	11.5	1.000	1.000	14.43	54.6	1.97	Up	46ew
OptDn >	12.0	100.0	8.312	-1.443	20.5	0.816	1.000	12.70	60.6	2.85	Dn	46ew
	12.0	110.0	8.549	-2.924	21.1	0.891	1.000	11.42	67.1	2.53	Dn	46ew
	12.0	120.0	8.749	-4.374	22.2	1.000	1.000	10.01	74.1	2.26	Dn	46ew
	12.0	130.0	8.732	-5.613	12.5	1.000	1.000	9.03	83.5	1.48	Dn	46ew
	12.0	135.0	8.603	-6.084	9.4	1.000	1.000	8.37	89.2	1.20	Dn	46ew
	12.0	140.0	8.438	-6.464	6.9	1.000	1.000	7.69	95.6	0.96	Dn	46ew
	12.0	150.0	7.974	-6.906	3.3	1.000	1.000	6.46	112.0	0.54	Dn	46ew
	12.0	151.5	7.867	6.917	2.8	1.000	1.000	6.31	115.2	0.48	Dn	46ew
	12.0	160.0	6.918	-6.500	0.9	1.000	1.000	5.99	136.7	0.22	Dn	46ew
	12.0	170.0	5.976	-5.885	0.2	1.000	1.000	6.20	160.4	0.07	Dn	46ew
	12.0	180.0	5.359	-5.359	-0.0	1.000	1.000	6.64	180.0	-0.00	Dn	46ew
OptUp >	14.0	30.0	5.259	4.555	16.8	1.000	0.663	18.63	21.1	7.21	Up	46ew
	14.0	33.0	5.888	4.938	18.4	1.000	0.657	19.06	22.3	6.07	Up	46ew
	14.0	36.0	6.358	5.144	19.6	1.000	0.655	19.31	23.7	5.39	Up	46ew
	14.0	39.0	6.725	5.226	20.7	1.000	0.660	19.44	25.1	4.97	Up	46ew
	14.0	39.9	6.814	5.228	20.9	1.000	0.661	19.46	25.5	4.87	Up	46ew
	14.0	42.0	7.011	5.210	21.4	1.000	0.666	19.48	26.6	4.66	Up	46ew
	14.0	45.0	7.227	5.111	21.9	1.000	0.678	19.43	28.2	4.44	Up	46ew
	14.0	50.0	7.504	4.824	22.1	0.969	0.756	19.27	31.1	4.20	Up	46ew
	14.0	60.0	7.936	3.968	22.0	0.925	0.931	18.69	37.0	3.83	Up	46ew
	14.0	70.0	8.287	2.834	22.2	0.945	1.000	17.87	43.0	3.43	Up	46ew
	14.0	80.0	8.575	1.489	21.7	1.000	1.000	16.89	49.3	2.98	Up	46ew
	14.0	90.0	8.732	-0.000	15.3	1.000	1.000	16.08	57.1	2.21	Up	46ew
OptDn >	14.0	100.0	8.710	-1.512	10.5	1.000	1.000	14.94	65.2	1.66	Up	46ew
	14.0	110.0	8.849	-3.026	21.5	0.827	1.000	12.89	71.6	2.53	Dn	46ew
	14.0	120.0	9.114	-4.557	22.1	0.923	1.000	11.43	79.3	2.19	Dn	46ew
	14.0	130.0	9.299	-5.977	17.9	1.000	1.000	10.21	88.3	1.64	Dn	46ew
	14.0	135.0	9.223	-6.522	12.7	1.000	1.000	9.68	94.0	1.31	Dn	46ew
	14.0	140.0	9.043	-6.928	9.1	1.000	1.000	9.04	100.7	1.04	Dn	46ew
	14.0	150.0	8.460	-7.327	3.9	1.000	1.000	7.89	117.7	0.57	Dn	46ew
	14.0	150.4	8.424	7.328	3.7	1.000	1.000	7.85	118.6	0.54	Dn	46ew
	14.0	160.0	7.474	-7.023	1.1	1.000	1.000	7.43	139.9	0.25	Dn	46ew
	14.0	170.0	6.747	-6.645	0.3	1.000	1.000	7.45	160.9	0.07	Dn	46ew
	14.0	180.0	6.129	-6.129	-0.0	1.000	1.000	7.87	180.0	-0.00	Dn	46ew

Best Performance (cont)

	<i>TWS</i>	<i>TWA</i>	<i>V</i>	<i>VMG</i>	<i>Heel</i>	<i>Reef</i>	<i>Flat</i>	<i>AWS</i>	<i>AWA</i>	<i>Lee</i>	<i>Sail</i>	<i>Flot</i>
OptUp >	16.0	30.0	5.356	4.639	18.4	1.000	0.569	20.66	21.6	7.46	Up	46ew
	16.0	33.0	5.990	5.023	20.1	1.000	0.566	21.06	22.9	6.29	Up	46ew
	16.0	36.0	6.459	5.226	21.2	1.000	0.563	21.29	24.3	5.55	Up	46ew
	16.0	39.0	6.821	5.301	21.7	0.975	0.600	21.41	25.9	5.13	Up	46ew
	16.0	39.6	6.880	5.300	21.8	0.969	0.611	21.41	26.2	5.08	Up	46ew
	16.0	42.0	7.100	5.276	22.0	0.949	0.648	21.43	27.6	4.84	Up	46ew
	16.0	45.0	7.314	5.172	22.1	0.926	0.698	21.37	29.4	4.62	Up	46ew
	16.0	50.0	7.597	4.883	22.2	0.896	0.784	21.18	32.4	4.36	Up	46ew
	16.0	60.0	8.052	4.026	22.1	0.858	0.961	20.55	38.6	3.94	Up	46ew
	16.0	70.0	8.421	2.880	22.4	0.890	1.000	19.65	45.0	3.50	Up	46ew
	16.0	80.0	8.739	1.517	22.7	0.950	1.000	18.55	51.6	3.09	Up	46ew
	16.0	90.0	9.039	-0.000	20.2	1.000	1.000	17.52	58.9	2.50	Up	46ew
	16.0	100.0	9.129	-1.585	13.3	1.000	1.000	16.60	67.5	1.80	Up	46ew
	16.0	110.0	9.134	-3.124	22.0	0.771	1.000	14.41	75.3	2.52	Dn	46ew
	16.0	120.0	9.462	-4.731	22.6	0.862	1.000	12.88	83.5	2.15	Dn	46ew
OptDn >	16.0	130.0	9.760	-6.274	23.4	0.988	1.000	11.26	92.7	1.82	Dn	46ew
	16.0	135.0	9.834	-6.953	17.7	1.000	1.000	10.88	97.8	1.41	Dn	46ew
	16.0	140.0	9.696	-7.427	11.8	1.000	1.000	10.39	104.3	1.09	Dn	46ew
	16.0	147.8	9.139	7.729	5.9	1.000	1.000	9.56	117.4	0.69	Dn	46ew
	16.0	150.0	8.894	-7.702	4.6	1.000	1.000	9.39	121.9	0.59	Dn	46ew
	16.0	160.0	7.931	-7.452	1.5	1.000	1.000	8.97	142.4	0.28	Dn	46ew
	16.0	170.0	7.327	-7.216	0.3	1.000	1.000	8.88	161.8	0.08	Dn	46ew
	16.0	180.0	6.802	-6.802	-0.0	1.000	1.000	9.20	180.0	-0.00	Dn	46ew
	18.0	30.0	5.326	4.613	19.8	1.000	0.495	22.56	22.0	7.99	Up	46ew
	18.0	33.0	5.973	5.010	20.0	0.906	0.618	23.00	23.6	6.79	Up	46ew
OptUp >	18.0	36.0	6.485	5.246	21.5	0.940	0.566	23.23	25.1	5.87	Up	46ew
	18.0	39.0	6.865	5.335	21.8	0.910	0.612	23.36	26.8	5.36	Up	46ew
	18.0	39.8	6.943	5.335	21.9	0.903	0.625	23.36	27.2	5.27	Up	46ew
	18.0	42.0	7.152	5.315	22.1	0.882	0.670	23.36	28.5	5.06	Up	46ew
	18.0	45.0	7.370	5.211	22.3	0.868	0.709	23.29	30.4	4.82	Up	46ew
	18.0	50.0	7.663	4.925	22.3	0.836	0.804	23.08	33.6	4.54	Up	46ew
	18.0	60.0	8.142	4.071	22.3	0.801	0.985	22.40	40.1	4.07	Up	46ew
	18.0	70.0	8.531	2.918	22.6	0.840	1.000	21.43	46.7	3.58	Up	46ew
	18.0	80.0	8.884	1.543	22.9	0.898	1.000	20.27	53.7	3.13	Up	46ew
	18.0	90.0	9.253	-0.000	23.0	0.974	1.000	18.97	60.8	2.69	Up	46ew
	18.0	100.0	9.517	-1.653	17.2	1.000	1.000	18.10	69.3	1.96	Up	46ew
	18.0	110.0	9.427	-3.224	10.8	1.000	1.000	16.93	78.9	1.43	Up	46ew
	18.0	120.0	9.787	-4.894	23.1	0.807	1.000	14.36	86.9	2.12	Dn	46ew
	18.0	130.0	10.201	-6.557	24.0	0.927	1.000	12.67	96.2	1.75	Dn	46ew
	18.0	135.0	10.436	-7.380	23.7	1.000	1.000	11.88	101.1	1.53	Dn	46ew
OptDn >	18.0	140.0	10.437	-7.995	15.7	1.000	1.000	11.63	106.7	1.11	Dn	46ew
	18.0	145.5	9.958	8.205	9.1	1.000	1.000	11.19	115.8	0.82	Dn	46ew
	18.0	150.0	9.365	-8.110	5.4	1.000	1.000	10.91	124.8	0.60	Dn	46ew
	18.0	160.0	8.344	-7.840	2.0	1.000	1.000	10.55	144.3	0.31	Dn	46ew
	18.0	170.0	7.772	-7.654	0.4	1.000	1.000	10.43	162.6	0.08	Dn	46ew
	18.0	180.0	7.318	-7.318	-0.0	1.000	1.000	10.68	180.0	-0.00	Dn	46ew

Best Performance (cont)

	TWS	TWA	V	VMG	Heel	Reef	Flat	AWS	AWA	Lee	Sail	Flot
OptUp >	20.0	30.0	5.180	4.486	19.9	0.956	0.480	24.39	22.7	8.85	Up	46ew
	20.0	33.0	5.938	4.980	20.8	0.914	0.527	24.89	24.1	7.08	Up	46ew
	20.0	36.0	6.467	5.232	21.8	0.890	0.564	25.14	25.7	6.23	Up	46ew
	20.0	39.0	6.867	5.337	22.1	0.861	0.612	25.26	27.5	5.65	Up	46ew
	20.0	40.1	6.983	5.340	22.2	0.851	0.632	25.27	28.2	5.50	Up	46ew
	20.0	42.0	7.169	5.328	22.2	0.835	0.667	25.28	29.3	5.27	Up	46ew
	20.0	45.0	7.398	5.231	22.4	0.813	0.726	25.20	31.3	5.04	Up	46ew
	20.0	50.0	7.706	4.953	22.4	0.784	0.824	24.97	34.6	4.72	Up	46ew
	20.0	60.0	8.211	4.105	22.4	0.754	1.000	24.25	41.3	4.20	Up	46ew
	20.0	70.0	8.621	2.949	22.8	0.797	1.000	23.22	48.2	3.67	Up	46ew
	20.0	80.0	9.014	1.565	23.1	0.853	1.000	22.00	55.4	3.19	Up	46ew
	20.0	90.0	9.434	-0.000	23.3	0.926	1.000	20.65	62.8	2.71	Up	46ew
	20.0	100.0	9.828	-1.707	21.6	1.000	1.000	19.39	70.9	2.16	Up	46ew
OptDn >	20.0	110.0	9.884	-3.381	13.4	1.000	1.000	18.53	80.5	1.51	Up	46ew
	20.0	120.0	10.125	-5.063	23.6	0.759	1.000	15.88	89.5	2.08	Dn	46ew
	20.0	130.0	10.684	-6.868	24.6	0.874	1.000	14.10	98.9	1.66	Dn	46ew
	20.0	135.0	10.986	-7.768	25.2	0.954	1.000	13.18	103.9	1.46	Dn	46ew
	20.0	140.0	11.216	-8.592	20.6	1.000	1.000	12.71	108.8	1.11	Dn	46ew
	20.0	144.4	10.917	8.878	12.8	1.000	1.000	12.55	115.2	0.85	Dn	46ew
	20.0	150.0	9.871	-8.548	6.4	1.000	1.000	12.42	126.9	0.62	Dn	46ew
	20.0	160.0	8.736	-8.209	2.4	1.000	1.000	12.16	145.8	0.34	Dn	46ew
	20.0	170.0	8.168	-8.044	0.5	1.000	1.000	12.04	163.2	0.09	Dn	46ew
	20.0	180.0	7.725	-7.725	-0.0	1.000	1.000	12.27	180.0	-0.00	Dn	46ew
OptUp >	25.0	30.0	4.562	3.951	19.3	0.860	0.452	28.74	24.2	12.29	Up	46ew
	25.0	33.0	5.444	4.566	21.6	0.843	0.482	29.29	25.6	9.39	Up	46ew
	25.0	36.0	6.177	4.997	21.8	0.783	0.572	29.72	27.3	7.63	Up	46ew
	25.0	39.0	6.696	5.204	22.1	0.754	0.628	29.91	29.2	6.63	Up	46ew
	25.0	41.7	7.047	5.260	22.6	0.732	0.684	29.95	30.9	6.14	Up	46ew
	25.0	42.0	7.089	5.268	22.6	0.729	0.690	29.96	31.0	6.07	Up	46ew
	25.0	45.0	7.368	5.210	22.6	0.708	0.752	29.89	33.1	5.69	Up	46ew
	25.0	50.0	7.729	4.968	22.7	0.682	0.856	29.64	36.6	5.25	Up	46ew
	25.0	60.0	8.304	4.152	22.9	0.667	1.000	28.82	43.8	4.56	Up	46ew
	25.0	70.0	8.778	3.002	23.4	0.705	1.000	27.67	51.2	3.94	Up	46ew
	25.0	80.0	9.275	1.611	23.7	0.756	1.000	26.34	58.9	3.35	Up	46ew
	25.0	90.0	9.798	-0.000	24.2	0.826	1.000	24.82	66.8	2.80	Up	46ew
	25.0	100.0	10.405	-1.807	24.7	0.914	1.000	23.18	74.8	2.27	Up	46ew
OptDn >	25.0	110.0	11.057	-3.782	23.1	1.000	1.000	21.76	83.4	1.70	Up	46ew
	25.0	120.0	11.106	-5.553	14.1	1.000	1.000	21.04	93.8	1.16	Up	46ew
	25.0	130.0	11.946	-7.679	25.8	0.767	1.000	17.72	103.5	1.42	Dn	46ew
	25.0	135.0	12.443	-8.799	26.5	0.842	1.000	16.66	108.3	1.19	Dn	46ew
	25.0	140.0	12.942	-9.915	27.3	0.943	1.000	15.57	113.5	0.98	Dn	46ew
	25.0	146.0	13.118	10.881	18.5	1.000	1.000	15.28	119.9	0.64	Dn	46ew
	25.0	150.0	11.891	-10.298	10.1	1.000	1.000	15.71	128.4	0.56	Dn	46ew
	25.0	160.0	9.872	-9.277	3.8	1.000	1.000	16.07	147.9	0.38	Dn	46ew
	25.0	170.0	9.091	-8.953	0.8	1.000	1.000	16.12	164.4	0.11	Dn	46ew
	25.0	180.0	8.583	-8.583	-0.0	1.000	1.000	16.42	180.0	-0.00	Dn	46ew

Best Performance (cont)

	<i>TWS</i>	<i>TWA</i>	<i>V</i>	<i>VMG</i>	<i>Heel</i>	<i>Reef</i>	<i>Flat</i>	<i>AWS</i>	<i>AWA</i>	<i>Lee</i>	<i>Sail</i>	<i>Flot</i>
	30.0	30.0	4.066	3.521	8.7	0.500	0.995	33.51	26.3	15.00	Up	46ew
	30.0	33.0	3.700	3.103	35.0	0.657	0.375	31.81	24.9	15.00	Up	46ew
	30.0	36.0	5.346	4.325	21.2	0.706	0.572	33.87	29.0	11.01	Up	46ew
	30.0	39.0	6.199	4.818	22.3	0.676	0.639	34.30	30.6	8.56	Up	46ew
	30.0	42.0	6.770	5.031	22.6	0.652	0.701	34.47	32.5	7.32	Up	46ew
OptUp >	30.0	44.3	7.083	5.070	22.8	0.636	0.751	34.47	34.1	6.76	Up	46ew
	30.0	45.0	7.182	5.079	22.8	0.631	0.766	34.48	34.6	6.59	Up	46ew
	30.0	50.0	7.637	4.909	23.1	0.608	0.870	34.23	38.1	5.94	Up	46ew
	30.0	60.0	8.305	4.152	23.4	0.598	1.000	33.34	45.6	5.02	Up	46ew
	30.0	70.0	8.846	3.026	24.1	0.633	1.000	32.06	53.4	4.29	Up	46ew
	30.0	80.0	9.438	1.639	24.5	0.680	1.000	30.61	61.4	3.58	Up	46ew
	30.0	90.0	10.079	-0.000	25.2	0.744	1.000	28.96	69.6	2.94	Up	46ew
	30.0	100.0	10.891	-1.891	25.8	0.824	1.000	27.21	77.9	2.29	Up	46ew
	30.0	110.0	11.813	-4.040	26.2	0.922	1.000	25.34	86.5	1.71	Up	46ew
	30.0	120.0	12.733	-6.367	23.1	1.000	1.000	24.01	95.4	1.14	Up	46ew
	30.0	130.0	13.290	-8.542	27.1	0.686	1.000	21.32	106.3	1.17	Dn	46ew
	30.0	135.0	14.038	-9.926	27.8	0.757	1.000	20.09	110.9	0.93	Dn	46ew
	30.0	140.0	14.858	-11.382	28.6	0.850	1.000	18.77	115.6	0.72	Dn	46ew
OptDn >	30.0	148.4	15.815	13.475	22.3	1.000	1.000	17.50	123.8	0.40	Dn	46ew
	30.0	150.0	15.288	-13.240	17.5	1.000	1.000	17.86	126.8	0.37	Dn	46ew
	30.0	160.0	11.593	-10.894	5.5	1.000	1.000	19.49	148.4	0.35	Dn	46ew
	30.0	170.0	10.201	-10.046	1.1	1.000	1.000	20.03	164.9	0.12	Dn	46ew
	30.0	180.0	9.464	-9.464	-0.0	1.000	1.000	20.54	180.0	-0.00	Dn	46ew