

# **FARR<sup>®</sup>**

## **PERFORMANCE PREDICTION**



**DESIGN #446  
First 36.7-Racing Keel  
for  
Chantiers Beneteau S.A.**

Farr Yacht Design, Ltd.  
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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).

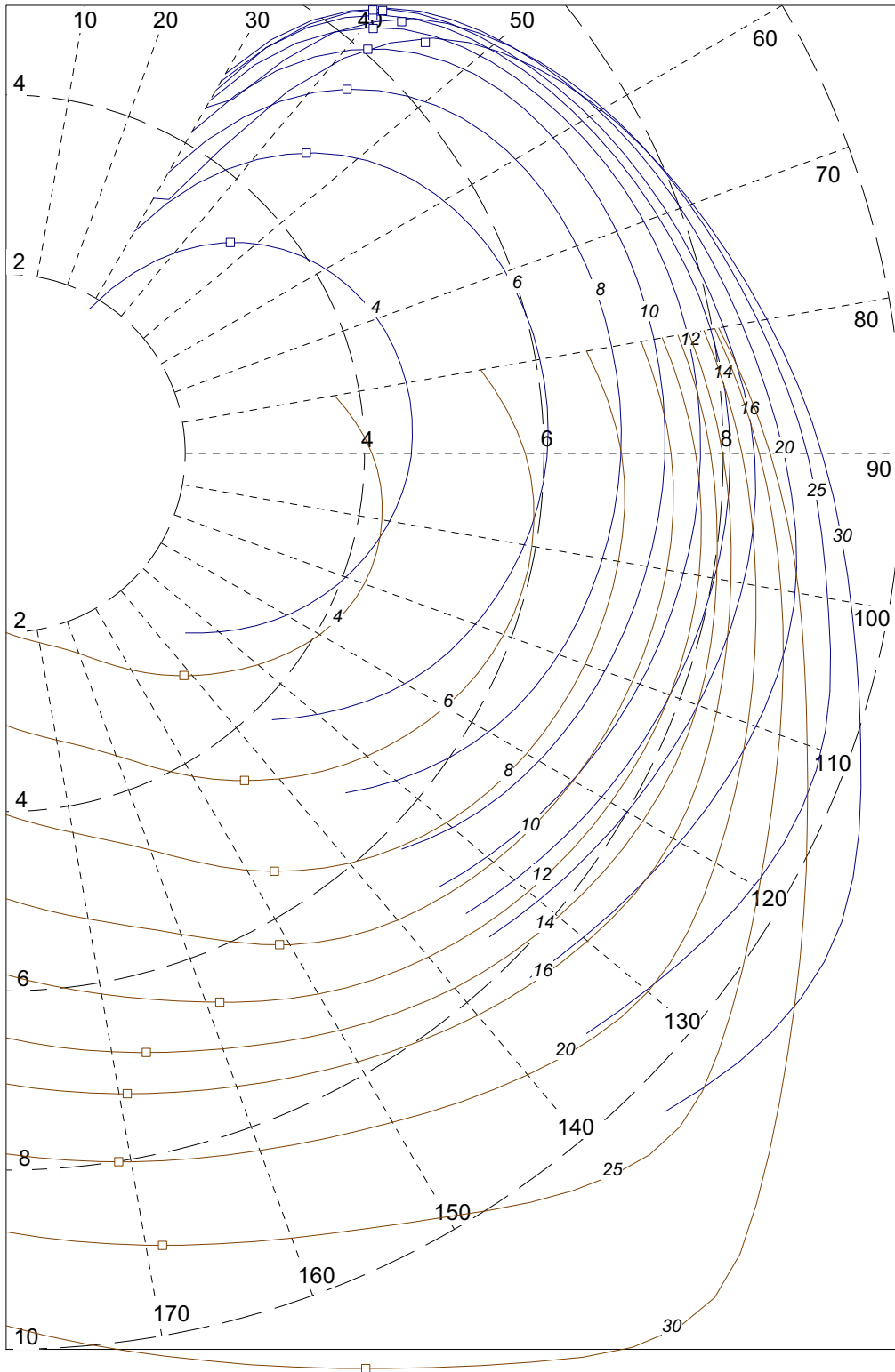
### **Times for 1 nm (secs)**

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.

**D446 - Beneteau First 36.7- Racing Version  
For Chantiers Beneteau**



Best Boatspeeds (kt)										
	4	6	8	10	12	14	16	20	25	30
30.0	1.86	2.86	3.62	4.14	4.55	4.79	4.89	4.68	4.45	3.29
33.0	2.23	3.37	4.22	4.82	5.23	5.45	5.56	5.46	4.76	3.44
36.0	2.55	3.79	4.71	5.35	5.71	5.93	6.03	5.98	5.58	4.47
39.0	2.83	4.15	5.12	5.75	6.09	6.29	6.38	6.37	6.12	5.45
42.0	3.09	4.46	5.46	6.08	6.39	6.56	6.65	6.67	6.53	6.09
45.0	3.32	4.74	5.74	6.34	6.62	6.77	6.85	6.89	6.82	6.55
50.0	3.64	5.13	6.11	6.67	6.90	7.03	7.11	7.18	7.17	7.03
60.0	4.12	5.64	6.56	7.05	7.30	7.42	7.52	7.64	7.70	7.67
70.0	4.40	5.93	6.78	7.25	7.57	7.74	7.85	8.01	8.12	8.15
80.0	4.53	6.05	6.86	7.34	7.71	7.98	8.13	8.33	8.52	8.62
90.0	4.52	6.04	6.86	7.42	7.74	8.08	8.35	8.67	8.94	9.10
100.0	4.34	5.96	6.94	7.48	7.85	8.05	8.35	8.94	9.31	9.57
110.0	4.25	5.91	6.87	7.43	7.88	8.21	8.43	8.90	9.68	10.15
120.0	4.04	5.65	6.70	7.30	7.79	8.20	8.59	9.14	9.70	10.71
130.0	3.67	5.25	6.41	7.10	7.60	8.04	8.46	9.34	10.37	11.26
135.0	3.45	5.01	6.21	6.96	7.48	7.92	8.34	9.24	10.63	11.84
140.0	3.23	4.74	5.97	6.80	7.33	7.78	8.18	9.05	10.52	12.30
150.0	2.79	4.16	5.37	6.33	6.96	7.43	7.84	8.62	9.84	11.71
160.0	2.37	3.59	4.71	5.71	6.51	7.07	7.52	8.28	9.32	10.87
170.0	2.14	3.25	4.30	5.27	6.12	6.78	7.26	8.03	8.97	10.23
180.0	2.00	3.03	4.03	4.97	5.81	6.52	7.03	7.81	8.68	9.73
Up.Vs(kts)	3.44	4.74	5.57	6.05	6.27	6.37	6.42	6.49	6.53	6.55
Up.Vs(s/m)	1048.0	759.6	646.9	595.1	574.5	565.2	560.8	555.0	551.3	549.7
Up.Vs(s/L)	6.0	4.4	3.7	3.4	3.3	3.2	3.2	3.2	3.2	3.2
Up.Bt	46.8	45.0	43.1	41.8	40.8	40.0	39.6	40.4	42.5	45.6
Up.Vmg(kts)	2.35	3.35	4.06	4.51	4.74	4.88	4.94	4.94	4.82	4.58
Up.Vmg(s/m)	1529.7	1074.6	886.6	798.8	759.1	737.9	728.0	728.4	747.6	785.5
Up.Heel	2.7	5.8	9.9	15.6	18.4	20.3	21.8	22.7	23.0	23.4
Up.Reef	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.76	0.66
Up.Flat	1.00	1.00	1.00	0.97	0.82	0.70	0.60	0.59	0.65	0.72
Up.Va	6.83	9.92	12.61	14.95	17.06	19.06	21.00	24.80	29.41	33.84
Up.Ba	25.2	25.2	25.3	25.5	25.9	26.3	26.8	28.8	31.9	35.5
Up.Leewy	2.61	2.85	3.31	3.91	4.08	4.26	4.44	4.85	5.44	6.04
Dn.Vs(kts)	3.17	4.52	5.54	6.27	6.57	6.87	7.27	8.00	9.01	10.97
Dn.Vs(s/m)	1133.9	797.2	649.6	573.7	547.8	524.2	495.0	449.7	399.7	328.0
Dn.Vs(s/L)	6.5	4.6	3.7	3.3	3.1	3.0	2.8	2.6	2.3	1.9
Dn.Bt	141.3	143.9	147.3	150.9	158.7	166.8	169.3	171.0	168.8	158.5
Dn.Vmg(kts)	2.48	3.65	4.66	5.48	6.12	6.69	7.15	7.91	8.84	10.21
Dn.Vmg(s/m)	1452.4	986.4	772.2	656.6	588.0	538.4	503.8	455.4	407.4	352.5
Dn.Heel	0.5	0.8	1.1	1.2	0.9	0.7	0.7	1.0	2.2	7.3
Dn.Reef	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
Dn.Va	2.50	3.55	4.48	5.45	6.34	7.48	8.96	12.16	16.26	20.14
Dn.Ba	88.8	95.4	105.4	116.9	136.6	154.7	160.6	165.0	162.7	147.3
Dn.Leewy	0.44	0.39	0.33	0.28	0.19	0.13	0.12	0.14	0.21	0.40

Shaded cells lie outside upwind and downwind optimum sailing angles.

**Course Times**

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	Leeward <u>1.00 nm.</u>	WL <u>1.00 nm.</u>	LR <u>1.00 nm.</u>	Windward <u>1.00 nm.</u>	OLYMPIC <u>1.00 nm.</u>	CR <u>1.00 nm.</u>
4.0	1452.4	1491.0	1047.4	1529.7	1388.1	1106.6
6.0	986.4	1030.5	746.6	1074.6	965.3	780.0
8.0	772.2	829.4	623.4	886.6	785.3	644.4
10.0	656.6	727.7	563.3	798.8	699.0	578.8
12.0	588.0	673.5	529.6	759.1	654.9	543.6
14.0	538.4	638.1	507.2	737.9	627.0	521.1
16.0	503.8	615.9	490.6	728.0	609.3	505.5
20.0	455.4	591.9	466.2	728.4	589.5	485.3
25.0	407.4	577.5	441.2	747.6	578.0	469.2
30.0	352.5	569.0	416.2	785.5	579.8	459.1

Times for 1 nm (secs)

	4	6	8	10	12	14	16	20	25	30
30.0	1931.5	1259.0	995.8	868.9	792.0	751.5	735.9	769.3	808.1	1094.8
33.0	1615.7	1068.9	853.5	746.3	688.9	660.4	647.9	659.1	755.7	1047.6
36.0	1413.2	950.0	764.4	673.5	630.2	607.5	597.4	602.2	645.0	804.9
39.0	1270.9	867.6	702.8	626.2	591.0	572.7	564.2	564.7	588.2	660.7
42.0	1165.7	806.3	659.4	592.6	563.2	548.5	541.7	539.6	551.5	591.4
45.0	1085.3	759.2	627.4	567.7	543.5	531.6	525.9	522.3	528.1	549.6
50.0	988.5	702.4	589.2	539.6	521.4	511.9	506.6	501.4	502.4	511.8
60.0	874.2	638.3	548.5	510.7	493.5	484.9	478.9	471.3	467.7	469.5
70.0	817.3	607.4	531.4	496.7	475.4	465.1	458.6	449.6	443.6	441.9
80.0	794.1	595.4	524.8	490.7	466.7	451.2	442.9	432.0	422.8	417.8
90.0	796.4	596.4	524.5	485.5	464.8	445.8	431.2	415.0	402.9	395.6
100.0	828.5	604.4	519.0	481.1	458.9	447.4	431.0	402.7	386.9	376.2
110.0	846.6	609.5	523.9	484.3	456.9	438.5	426.9	404.3	371.9	354.8
120.0	891.0	636.6	537.2	492.9	462.3	438.9	419.1	394.0	371.2	336.2
130.0	982.0	685.3	561.4	507.3	473.4	447.8	425.3	385.3	347.0	319.7
135.0	1042.5	718.6	579.9	517.2	481.2	454.5	431.9	389.6	338.7	304.1
140.0	1113.2	759.7	603.5	529.8	490.9	462.5	439.9	397.7	342.2	292.8
150.0	1290.9	865.4	670.6	568.8	516.9	484.3	459.2	417.7	366.0	307.4
160.0	1516.4	1003.6	764.5	630.9	552.6	509.1	479.0	434.9	386.4	331.3
170.0	1679.9	1108.5	837.8	682.6	587.8	531.0	496.2	448.6	401.4	351.9
180.0	1800.8	1186.7	893.3	724.6	619.2	552.0	511.9	460.7	414.6	369.9
Up	1529.7	1074.6	886.6	798.8	759.1	737.9	728.0	728.4	747.6	785.5
Dn	1452.4	986.4	772.2	656.6	588.0	538.4	503.8	455.4	407.4	352.5

Equivalent ILC Average (using IMS formula): 709.22

Shaded cells lie outside upwind and downwind optimum sailing angles.

**Best Performance**

	<b>TWS</b>	<b>TWA</b>	<b>V</b>	<b>VMG</b>	<b>Heel</b>	<b>Reef</b>	<b>Flat</b>	<b>AWS</b>	<b>AWA</b>	<b>Lee</b>	<b>Sail</b>	<b>Flot</b>
	4.0	30.0	1.864	1.614	1.7	1.000	1.000	5.69	20.6	5.81	Up	44ce
	4.0	33.0	2.228	1.869	2.0	1.000	1.000	5.99	21.3	4.58	Up	44ce
	4.0	36.0	2.547	2.061	2.2	1.000	1.000	6.24	22.1	3.86	Up	44ce
	4.0	39.0	2.833	2.201	2.3	1.000	1.000	6.45	22.9	3.37	Up	44ce
	4.0	42.0	3.088	2.295	2.5	1.000	1.000	6.62	23.8	3.01	Up	44ce
	4.0	45.0	3.317	2.346	2.6	1.000	1.000	6.76	24.7	2.74	Up	44ce
<b>OptUp &gt;</b>	<b>4.0</b>	<b>46.8</b>	<b>3.435</b>	<b>2.353</b>	<b>2.7</b>	<b>1.000</b>	<b>1.000</b>	<b>6.83</b>	<b>25.2</b>	<b>2.61</b>	<b>Up</b>	<b>44ce</b>
	4.0	50.0	3.642	2.341	2.8	1.000	1.000	6.93	26.2	2.40	Up	44ce
	4.0	60.0	4.118	2.059	2.9	1.000	1.000	7.03	29.5	1.94	Up	44ce
	4.0	70.0	4.405	1.507	2.7	1.000	1.000	6.89	33.0	1.62	Up	44ce
	4.0	80.0	4.533	0.787	2.4	1.000	1.000	6.54	37.0	1.36	Up	44ce
	4.0	90.0	4.520	-0.000	2.0	1.000	1.000	6.03	41.5	1.14	Up	44ce
	4.0	100.0	4.345	-0.754	1.4	1.000	1.000	5.37	47.2	0.94	Up	44ce
	4.0	110.0	4.253	-1.454	1.7	1.000	1.000	4.74	52.5	1.00	Dn	44ce
	4.0	120.0	4.040	-2.020	1.3	1.000	1.000	4.02	59.5	0.84	Dn	44ce
	4.0	130.0	3.666	-2.356	0.8	1.000	1.000	3.25	70.3	0.66	Dn	44ce
	4.0	135.0	3.453	-2.442	0.6	1.000	1.000	2.90	77.5	0.56	Dn	44ce
	4.0	140.0	3.234	-2.477	0.5	1.000	1.000	2.58	86.2	0.47	Dn	44ce
<b>OptDn &gt;</b>	<b>4.0</b>	<b>141.3</b>	<b>3.175</b>	<b>2.479</b>	<b>0.5</b>	<b>1.000</b>	<b>1.000</b>	<b>2.50</b>	<b>88.8</b>	<b>0.44</b>	<b>Dn</b>	<b>44ce</b>
	4.0	150.0	2.789	-2.415	0.2	1.000	1.000	2.11	108.7	0.29	Dn	44ce
	4.0	160.0	2.374	-2.231	0.1	1.000	1.000	1.95	135.3	0.16	Dn	44ce
	4.0	170.0	2.143	-2.110	0.0	1.000	1.000	1.93	158.9	0.08	Dn	44ce
	4.0	180.0	1.999	-1.999	-0.0	1.000	1.000	2.00	180.0	-0.00	Dn	44ce
	6.0	30.0	2.860	2.476	4.0	1.000	0.999	8.59	20.4	5.60	Up	44ce
	6.0	33.0	3.368	2.825	4.5	1.000	1.000	9.01	21.2	4.51	Up	44ce
	6.0	36.0	3.789	3.066	4.9	1.000	1.000	9.33	22.1	3.86	Up	44ce
	6.0	39.0	4.149	3.225	5.3	1.000	1.000	9.58	23.1	3.43	Up	44ce
	6.0	42.0	4.465	3.318	5.6	1.000	1.000	9.78	24.1	3.10	Up	44ce
	6.0	45.0	4.742	3.353	5.8	1.000	1.000	9.93	25.2	2.84	Up	44ce
<b>OptUp &gt;</b>	<b>6.0</b>	<b>45.0</b>	<b>4.739</b>	<b>3.350</b>	<b>5.8</b>	<b>1.000</b>	<b>1.000</b>	<b>9.92</b>	<b>25.2</b>	<b>2.85</b>	<b>Up</b>	<b>44ce</b>
	6.0	50.0	5.125	3.295	6.0	1.000	1.000	10.08	27.0	2.51	Up	44ce
	6.0	60.0	5.640	2.820	6.0	1.000	1.000	10.07	30.9	2.05	Up	44ce
	6.0	70.0	5.926	2.027	5.6	1.000	1.000	9.75	35.1	1.70	Up	44ce
	6.0	80.0	6.046	1.050	4.8	1.000	1.000	9.21	39.7	1.42	Up	44ce
	6.0	90.0	6.036	-0.000	3.9	1.000	1.000	8.50	44.8	1.18	Up	44ce
	6.0	100.0	5.956	-1.034	4.8	1.000	1.000	7.67	50.1	1.23	Dn	44ce
	6.0	110.0	5.906	-2.020	4.1	1.000	1.000	6.82	55.6	1.06	Dn	44ce
	6.0	120.0	5.655	-2.827	3.0	1.000	1.000	5.83	62.9	0.87	Dn	44ce
	6.0	130.0	5.253	-3.377	2.0	1.000	1.000	4.80	73.1	0.66	Dn	44ce
	6.0	135.0	5.010	-3.543	1.4	1.000	1.000	4.31	79.7	0.56	Dn	44ce
	6.0	140.0	4.739	-3.630	1.0	1.000	1.000	3.86	87.9	0.47	Dn	44ce
<b>OptDn &gt;</b>	<b>6.0</b>	<b>143.9</b>	<b>4.516</b>	<b>3.649</b>	<b>0.8</b>	<b>1.000</b>	<b>1.000</b>	<b>3.55</b>	<b>95.4</b>	<b>0.39</b>	<b>Dn</b>	<b>44ce</b>
	6.0	150.0	4.160	-3.603	0.5	1.000	1.000	3.17	109.1	0.28	Dn	44ce
	6.0	160.0	3.587	-3.371	0.2	1.000	1.000	2.90	135.0	0.15	Dn	44ce
	6.0	170.0	3.248	-3.198	0.1	1.000	1.000	2.86	158.6	0.08	Dn	44ce
	6.0	180.0	3.034	-3.034	-0.0	1.000	1.000	2.97	180.0	-0.00	Dn	44ce

**Best Performance (cont)**

	<b>TWS</b>	<b>TWA</b>	<b>V</b>	<b>VMG</b>	<b>Heel</b>	<b>Reef</b>	<b>Flat</b>	<b>AWS</b>	<b>AWA</b>	<b>Lee</b>	<b>Sail</b>	<b>Flot</b>
	8.0	30.0	3.615	3.131	6.8	1.000	0.961	11.27	20.6	5.81	Up	44ce
	8.0	33.0	4.218	3.537	8.0	1.000	1.000	11.75	21.5	4.90	Up	44ce
	8.0	36.0	4.709	3.810	8.7	1.000	1.000	12.11	22.6	4.22	Up	44ce
	8.0	39.0	5.122	3.981	9.3	1.000	1.000	12.38	23.7	3.75	Up	44ce
	8.0	42.0	5.460	4.057	9.8	1.000	1.000	12.57	24.8	3.41	Up	44ce
<b>OptUp &gt;</b>	<b>8.0</b>	<b>43.1</b>	<b>5.565</b>	<b>4.060</b>	<b>9.9</b>	<b>1.000</b>	<b>1.000</b>	<b>12.61</b>	<b>25.3</b>	<b>3.31</b>	<b>Up</b>	<b>44ce</b>
	8.0	45.0	5.738	4.058	10.1	1.000	1.000	12.68	26.0	3.15	Up	44ce
	8.0	50.0	6.109	3.927	10.4	1.000	1.000	12.76	28.2	2.80	Up	44ce
	8.0	60.0	6.563	3.282	9.9	1.000	1.000	12.58	32.9	2.29	Up	44ce
	8.0	70.0	6.775	2.317	8.7	1.000	1.000	12.07	38.0	1.91	Up	44ce
	8.0	80.0	6.860	1.191	7.3	1.000	1.000	11.36	43.5	1.59	Up	44ce
	8.0	90.0	6.864	-0.000	9.4	1.000	1.000	10.46	49.0	1.66	Dn	44ce
	8.0	100.0	6.936	-1.204	8.3	1.000	1.000	9.57	54.6	1.46	Dn	44ce
	8.0	110.0	6.872	-2.350	6.6	1.000	1.000	8.54	61.0	1.20	Dn	44ce
	8.0	120.0	6.701	-3.351	4.8	1.000	1.000	7.41	68.6	0.94	Dn	44ce
	8.0	130.0	6.412	-4.122	3.2	1.000	1.000	6.25	78.3	0.70	Dn	44ce
	8.0	135.0	6.208	-4.390	2.5	1.000	1.000	5.68	84.4	0.58	Dn	44ce
	8.0	140.0	5.965	-4.570	1.7	1.000	1.000	5.14	91.8	0.48	Dn	44ce
<b>OptDn &gt;</b>	<b>8.0</b>	<b>147.3</b>	<b>5.542</b>	<b>4.662</b>	<b>1.1</b>	<b>1.000</b>	<b>1.000</b>	<b>4.48</b>	<b>105.4</b>	<b>0.33</b>	<b>Dn</b>	<b>44ce</b>
	8.0	150.0	5.368	-4.649	0.8	1.000	1.000	4.29	111.3	0.28	Dn	44ce
	8.0	160.0	4.709	-4.425	0.3	1.000	1.000	3.92	135.8	0.16	Dn	44ce
	8.0	170.0	4.297	-4.232	0.1	1.000	1.000	3.84	158.8	0.08	Dn	44ce
	8.0	180.0	4.030	-4.030	-0.0	1.000	1.000	3.97	180.0	-0.00	Dn	44ce
	10.0	30.0	4.143	3.588	9.8	1.000	0.889	13.72	21.0	6.12	Up	44ce
	10.0	33.0	4.824	4.045	12.0	1.000	0.944	14.24	22.0	5.27	Up	44ce
	10.0	36.0	5.346	4.325	13.5	1.000	0.955	14.60	23.0	4.62	Up	44ce
	10.0	39.0	5.749	4.468	14.6	1.000	0.961	14.83	24.2	4.18	Up	44ce
<b>OptUp &gt;</b>	<b>10.0</b>	<b>41.8</b>	<b>6.050</b>	<b>4.507</b>	<b>15.6</b>	<b>1.000</b>	<b>0.971</b>	<b>14.95</b>	<b>25.5</b>	<b>3.91</b>	<b>Up</b>	<b>44ce</b>
	10.0	42.0	6.075	4.515	15.6	1.000	0.971	14.96	25.5	3.88	Up	44ce
	10.0	45.0	6.341	4.484	16.5	1.000	0.987	15.03	26.8	3.68	Up	44ce
	10.0	50.0	6.671	4.288	16.9	1.000	1.000	15.01	29.2	3.34	Up	44ce
	10.0	60.0	7.050	3.525	15.1	1.000	1.000	14.67	34.8	2.71	Up	44ce
	10.0	70.0	7.248	2.479	12.5	1.000	1.000	14.07	40.7	2.22	Up	44ce
	10.0	80.0	7.337	1.274	10.1	1.000	1.000	13.28	46.9	1.82	Up	44ce
	10.0	90.0	7.416	-0.000	15.8	1.000	1.000	12.15	52.4	2.08	Dn	44ce
	10.0	100.0	7.482	-1.299	12.8	1.000	1.000	11.19	59.1	1.75	Dn	44ce
	10.0	110.0	7.434	-2.543	9.6	1.000	1.000	10.10	66.6	1.40	Dn	44ce
	10.0	120.0	7.304	-3.652	6.8	1.000	1.000	8.90	75.0	1.07	Dn	44ce
	10.0	130.0	7.096	-4.562	4.5	1.000	1.000	7.67	85.0	0.78	Dn	44ce
	10.0	135.0	6.960	-4.921	3.5	1.000	1.000	7.06	90.9	0.64	Dn	44ce
	10.0	140.0	6.796	-5.206	2.6	1.000	1.000	6.48	97.7	0.51	Dn	44ce
	10.0	150.0	6.329	-5.481	1.1	1.000	1.000	5.52	115.0	0.29	Dn	44ce
<b>OptDn &gt;</b>	<b>10.0</b>	<b>150.9</b>	<b>6.275</b>	<b>5.483</b>	<b>1.2</b>	<b>1.000</b>	<b>1.000</b>	<b>5.45</b>	<b>116.9</b>	<b>0.28</b>	<b>Dn</b>	<b>44ce</b>
	10.0	160.0	5.706	-5.362	0.5	1.000	1.000	5.03	137.2	0.16	Dn	44ce
	10.0	170.0	5.274	-5.194	0.2	1.000	1.000	4.89	159.2	0.08	Dn	44ce
	10.0	180.0	4.968	-4.968	-0.0	1.000	1.000	5.03	180.0	-0.00	Dn	44ce



**Best Performance (cont)**

	<b>TWS</b>	<b>TWA</b>	<b>V</b>	<b>VMG</b>	<b>Heel</b>	<b>Reef</b>	<b>Flat</b>	<b>AWS</b>	<b>AWA</b>	<b>Lee</b>	<b>Sail</b>	<b>Flot</b>
	12.0	30.0	4.546	3.937	13.4	1.000	0.814	16.04	21.3	6.47	Up	44ce
	12.0	33.0	5.226	4.383	15.1	1.000	0.810	16.54	22.4	5.27	Up	44ce
	12.0	36.0	5.712	4.621	16.6	1.000	0.814	16.84	23.7	4.65	Up	44ce
	12.0	39.0	6.092	4.734	17.8	1.000	0.819	17.01	25.0	4.25	Up	44ce
<b>OptUp &gt;</b>	<b>12.0</b>	<b>40.8</b>	<b>6.266</b>	<b>4.742</b>	<b>18.4</b>	<b>1.000</b>	<b>0.825</b>	<b>17.06</b>	<b>25.9</b>	<b>4.08</b>	<b>Up</b>	<b>44ce</b>
	12.0	42.0	6.392	4.750	18.7	1.000	0.828	17.09	26.4	3.96	Up	44ce
	12.0	45.0	6.624	4.684	19.5	1.000	0.842	17.10	27.9	3.76	Up	44ce
	12.0	50.0	6.905	4.438	20.3	1.000	0.875	16.97	30.5	3.54	Up	44ce
	12.0	60.0	7.295	3.648	21.3	1.000	0.966	16.45	36.1	3.24	Up	44ce
	12.0	70.0	7.572	2.590	18.3	1.000	1.000	15.84	42.5	2.65	Up	44ce
	12.0	80.0	7.714	1.339	13.9	1.000	1.000	15.09	49.5	2.09	Up	44ce
	12.0	90.0	7.745	-0.000	10.4	1.000	1.000	14.12	56.7	1.66	Up	44ce
	12.0	100.0	7.846	-1.362	19.5	1.000	1.000	12.54	62.7	2.13	Dn	44ce
	12.0	110.0	7.879	-2.695	13.7	1.000	1.000	11.59	71.0	1.63	Dn	44ce
	12.0	120.0	7.788	-3.894	9.3	1.000	1.000	10.41	80.1	1.23	Dn	44ce
	12.0	130.0	7.605	-4.888	6.0	1.000	1.000	9.14	90.7	0.87	Dn	44ce
	12.0	135.0	7.481	-5.290	4.7	1.000	1.000	8.52	96.8	0.72	Dn	44ce
	12.0	140.0	7.334	-5.618	3.5	1.000	1.000	7.92	103.6	0.57	Dn	44ce
	12.0	150.0	6.965	-6.032	1.6	1.000	1.000	6.91	119.7	0.32	Dn	44ce
<b>OptDn &gt;</b>	<b>12.0</b>	<b>158.7</b>	<b>6.571</b>	<b>6.123</b>	<b>0.9</b>	<b>1.000</b>	<b>1.000</b>	<b>6.34</b>	<b>136.6</b>	<b>0.19</b>	<b>Dn</b>	<b>44ce</b>
	12.0	160.0	6.514	-6.122	0.8	1.000	1.000	6.29	139.2	0.18	Dn	44ce
	12.0	170.0	6.125	-6.032	0.3	1.000	1.000	6.06	159.9	0.09	Dn	44ce
	12.0	180.0	5.814	-5.814	-0.0	1.000	1.000	6.19	180.0	-0.00	Dn	44ce
	14.0	30.0	4.790	4.149	15.9	1.000	0.701	18.21	21.7	6.57	Up	44ce
	14.0	33.0	5.451	4.572	17.7	1.000	0.697	18.66	22.9	5.40	Up	44ce
	14.0	36.0	5.925	4.794	19.0	1.000	0.695	18.93	24.3	4.74	Up	44ce
	14.0	39.0	6.286	4.885	20.1	1.000	0.700	19.06	25.7	4.34	Up	44ce
<b>OptUp &gt;</b>	<b>14.0</b>	<b>40.0</b>	<b>6.369</b>	<b>4.879</b>	<b>20.3</b>	<b>1.000</b>	<b>0.703</b>	<b>19.06</b>	<b>26.3</b>	<b>4.26</b>	<b>Up</b>	<b>44ce</b>
	14.0	42.0	6.564	4.878	20.9	1.000	0.708	19.09	27.3	4.06	Up	44ce
	14.0	45.0	6.773	4.789	21.5	1.000	0.720	19.05	28.9	3.87	Up	44ce
	14.0	50.0	7.033	4.521	22.2	1.000	0.750	18.86	31.8	3.64	Up	44ce
	14.0	60.0	7.424	3.712	22.5	0.980	0.870	18.26	37.8	3.32	Up	44ce
	14.0	70.0	7.740	2.647	22.5	0.973	1.000	17.45	44.1	3.03	Up	44ce
	14.0	80.0	7.979	1.386	19.3	1.000	1.000	16.66	51.3	2.46	Up	44ce
	14.0	90.0	8.075	-0.000	13.7	1.000	1.000	15.82	59.3	1.87	Up	44ce
	14.0	100.0	8.046	-1.397	22.6	0.953	1.000	13.91	66.2	2.35	Dn	44ce
	14.0	110.0	8.210	-2.808	19.6	1.000	1.000	12.86	74.6	1.92	Dn	44ce
	14.0	120.0	8.203	-4.102	12.5	1.000	1.000	11.90	84.2	1.39	Dn	44ce
	14.0	130.0	8.039	-5.167	7.8	1.000	1.000	10.67	95.2	0.98	Dn	44ce
	14.0	135.0	7.922	-5.601	6.0	1.000	1.000	10.04	101.4	0.80	Dn	44ce
	14.0	140.0	7.783	-5.962	4.5	1.000	1.000	9.44	108.2	0.63	Dn	44ce
	14.0	150.0	7.433	-6.438	2.3	1.000	1.000	8.42	123.8	0.36	Dn	44ce
	14.0	160.0	7.071	-6.644	1.1	1.000	1.000	7.74	141.8	0.21	Dn	44ce
<b>OptDn &gt;</b>	<b>14.0</b>	<b>166.8</b>	<b>6.868</b>	<b>6.686</b>	<b>0.7</b>	<b>1.000</b>	<b>1.000</b>	<b>7.48</b>	<b>154.7</b>	<b>0.13</b>	<b>Dn</b>	<b>44ce</b>
	14.0	170.0	6.780	-6.677	0.5	1.000	1.000	7.42	160.9	0.10	Dn	44ce
	14.0	180.0	6.522	-6.522	-0.0	1.000	1.000	7.48	180.0	-0.00	Dn	44ce

**Best Performance (cont)**

	<b>TWS</b>	<b>TWA</b>	<b>V</b>	<b>VMG</b>	<b>Heel</b>	<b>Reef</b>	<b>Flat</b>	<b>AWS</b>	<b>AWA</b>	<b>Lee</b>	<b>Sail</b>	<b>Flot</b>
	16.0	30.0	4.892	4.237	17.9	1.000	0.606	20.24	22.1	6.86	Up	44ce
	16.0	33.0	5.556	4.660	19.6	1.000	0.600	20.67	23.4	5.60	Up	44ce
	16.0	36.0	6.026	4.875	20.8	1.000	0.599	20.91	24.9	4.91	Up	44ce
	16.0	39.0	6.381	4.959	21.7	1.000	0.601	21.01	26.4	4.47	Up	44ce
<b>OptUp &gt;</b>	<b>16.0</b>	<b>39.6</b>	<b>6.419</b>	<b>4.945</b>	<b>21.8</b>	<b>1.000</b>	<b>0.604</b>	<b>21.00</b>	<b>26.8</b>	<b>4.44</b>	<b>Up</b>	<b>44ce</b>
	16.0	42.0	6.646	4.939	22.4	1.000	0.610	21.01	28.1	4.19	Up	44ce
	16.0	45.0	6.846	4.841	22.6	0.982	0.648	20.95	29.9	4.01	Up	44ce
	16.0	50.0	7.106	4.567	22.7	0.947	0.732	20.74	33.0	3.79	Up	44ce
	16.0	60.0	7.517	3.758	22.6	0.906	0.897	20.11	39.5	3.43	Up	44ce
	16.0	70.0	7.850	2.685	22.7	0.912	1.000	19.23	46.2	3.10	Up	44ce
	16.0	80.0	8.128	1.411	23.0	0.974	1.000	18.15	53.1	2.76	Up	44ce
	16.0	90.0	8.348	-0.000	18.3	1.000	1.000	17.34	61.2	2.13	Up	44ce
	16.0	100.0	8.352	-1.450	12.1	1.000	1.000	16.38	70.1	1.59	Up	44ce
	16.0	110.0	8.433	-2.884	23.3	0.967	1.000	14.12	77.9	2.13	Dn	44ce
	16.0	120.0	8.590	-4.295	17.2	1.000	1.000	13.25	87.4	1.57	Dn	44ce
	16.0	130.0	8.464	-5.441	10.0	1.000	1.000	12.21	98.6	1.08	Dn	44ce
	16.0	135.0	8.335	-5.894	7.6	1.000	1.000	11.60	104.9	0.88	Dn	44ce
	16.0	140.0	8.183	-6.269	5.6	1.000	1.000	11.02	111.7	0.70	Dn	44ce
	16.0	150.0	7.840	-6.789	2.9	1.000	1.000	10.00	127.0	0.41	Dn	44ce
<b>OptDn &gt;</b>	<b>16.0</b>	<b>169.3</b>	<b>7.273</b>	<b>7.146</b>	<b>0.7</b>	<b>1.000</b>	<b>1.000</b>	<b>8.96</b>	<b>160.6</b>	<b>0.12</b>	<b>Dn</b>	<b>44ce</b>
	16.0	170.0	7.255	-7.145	0.6	1.000	1.000	8.94	161.9	0.11	Dn	44ce
	16.0	180.0	7.033	-7.033	-0.0	1.000	1.000	8.97	180.0	-0.00	Dn	44ce
	20.0	30.0	4.680	4.053	20.1	1.000	0.461	23.92	23.1	8.29	Up	44ce
	20.0	33.0	5.462	4.581	21.7	0.978	0.482	24.43	24.5	6.44	Up	44ce
	20.0	36.0	5.978	4.836	22.2	0.940	0.526	24.69	26.2	5.54	Up	44ce
	20.0	39.0	6.375	4.954	22.6	0.909	0.570	24.81	27.9	4.98	Up	44ce
<b>OptUp &gt;</b>	<b>20.0</b>	<b>40.4</b>	<b>6.487</b>	<b>4.942</b>	<b>22.7</b>	<b>0.897</b>	<b>0.593</b>	<b>24.80</b>	<b>28.8</b>	<b>4.85</b>	<b>Up</b>	<b>44ce</b>
	20.0	42.0	6.671	4.958	22.8	0.881	0.621	24.82	29.8	4.63	Up	44ce
	20.0	45.0	6.892	4.874	22.8	0.858	0.675	24.74	31.8	4.40	Up	44ce
	20.0	50.0	7.180	4.615	22.9	0.825	0.767	24.51	35.2	4.12	Up	44ce
	20.0	60.0	7.639	3.819	22.9	0.794	0.926	23.78	42.1	3.67	Up	44ce
	20.0	70.0	8.006	2.738	23.1	0.811	1.000	22.79	49.3	3.27	Up	44ce
	20.0	80.0	8.333	1.447	23.3	0.868	1.000	21.60	56.9	2.88	Up	44ce
	20.0	90.0	8.674	-0.000	23.6	0.945	1.000	20.27	64.7	2.50	Up	44ce
	20.0	100.0	8.939	-1.552	20.0	1.000	1.000	19.30	73.5	1.95	Up	44ce
	20.0	110.0	8.904	-3.046	12.7	1.000	1.000	18.45	83.6	1.42	Up	44ce
	20.0	120.0	9.136	-4.568	24.9	0.958	1.000	15.73	93.1	1.87	Dn	44ce
	20.0	130.0	9.344	-6.007	16.7	1.000	1.000	15.09	103.5	1.25	Dn	44ce
	20.0	135.0	9.240	-6.533	11.8	1.000	1.000	14.68	109.5	1.00	Dn	44ce
	20.0	140.0	9.053	-6.935	8.5	1.000	1.000	14.17	116.2	0.80	Dn	44ce
	20.0	150.0	8.619	-7.464	4.7	1.000	1.000	13.23	131.1	0.51	Dn	44ce
	20.0	160.0	8.277	-7.778	2.7	1.000	1.000	12.54	147.0	0.33	Dn	44ce
	20.0	170.0	8.025	-7.903	1.1	1.000	1.000	12.18	163.4	0.15	Dn	44ce
<b>OptDn &gt;</b>	<b>20.0</b>	<b>171.0</b>	<b>8.005</b>	<b>7.905</b>	<b>1.0</b>	<b>1.000</b>	<b>1.000</b>	<b>12.16</b>	<b>165.0</b>	<b>0.14</b>	<b>Dn</b>	<b>44ce</b>
	20.0	180.0	7.814	-7.814	-0.0	1.000	1.000	12.19	180.0	-0.00	Dn	44ce

**Best Performance (cont)**

	<b>TWS</b>	<b>TWA</b>	<b>V</b>	<b>VMG</b>	<b>Heel</b>	<b>Reef</b>	<b>Flat</b>	<b>AWS</b>	<b>AWA</b>	<b>Lee</b>	<b>Sail</b>	<b>Flot</b>
	25.0	30.0	4.455	3.858	32.6	0.995	0.994	28.15	22.0	15.00	Up	44ce
	25.0	33.0	4.764	3.995	21.5	0.868	0.477	28.68	26.2	9.34	Up	44ce
	25.0	36.0	5.582	4.516	22.4	0.827	0.531	29.16	27.8	7.13	Up	44ce
	25.0	39.0	6.120	4.756	22.7	0.795	0.583	29.38	29.6	6.05	Up	44ce
	25.0	42.0	6.528	4.851	23.0	0.768	0.639	29.45	31.5	5.42	Up	44ce
<b>OptUp &gt;</b>	<b>25.0</b>	<b>42.5</b>	<b>6.531</b>	<b>4.815</b>	<b>23.0</b>	<b>0.764</b>	<b>0.649</b>	<b>29.41</b>	<b>31.9</b>	<b>5.44</b>	<b>Up</b>	<b>44ce</b>
	25.0	45.0	6.817	4.820	23.1	0.745	0.697	29.40	33.6	5.03	Up	44ce
	25.0	50.0	7.166	4.606	23.2	0.716	0.792	29.15	37.1	4.62	Up	44ce
	25.0	60.0	7.697	3.849	23.4	0.693	0.940	28.34	44.5	4.03	Up	44ce
	25.0	70.0	8.115	2.776	23.7	0.713	1.000	27.22	52.2	3.55	Up	44ce
	25.0	80.0	8.515	1.479	24.0	0.764	1.000	25.91	60.3	3.07	Up	44ce
	25.0	90.0	8.935	-0.000	24.5	0.835	1.000	24.45	68.6	2.63	Up	44ce
	25.0	100.0	9.306	-1.616	25.0	0.927	1.000	22.87	77.5	2.26	Up	44ce
	25.0	110.0	9.681	-3.311	21.9	1.000	1.000	21.82	87.0	1.74	Up	44ce
	25.0	120.0	9.698	-4.849	26.1	0.839	1.000	19.64	98.2	1.87	Dn	44ce
	25.0	130.0	10.375	-6.669	27.5	0.986	1.000	17.92	108.5	1.43	Dn	44ce
	25.0	135.0	10.628	-7.515	21.1	1.000	1.000	17.94	113.1	1.05	Dn	44ce
	25.0	140.0	10.520	-8.058	14.4	1.000	1.000	17.80	119.0	0.81	Dn	44ce
	25.0	150.0	9.836	-8.518	7.7	1.000	1.000	17.12	133.6	0.58	Dn	44ce
<b>OptDn &gt;</b>	<b>25.0</b>	<b>168.8</b>	<b>9.008</b>	<b>8.837</b>	<b>2.2</b>	<b>1.000</b>	<b>1.000</b>	<b>16.26</b>	<b>162.7</b>	<b>0.21</b>	<b>Dn</b>	<b>44ce</b>
	25.0	170.0	8.969	-8.833	1.8	1.000	1.000	16.24	164.5	0.19	Dn	44ce
	25.0	180.0	8.684	-8.684	-0.0	1.000	1.000	16.32	180.0	-0.00	Dn	44ce
	30.0	30.0	3.288	2.848	20.8	0.771	0.284	32.46	25.6	12.59	Up	44ce
	30.0	33.0	3.436	2.882	35.0	0.500	0.722	31.57	25.1	15.00	Up	44ce
	30.0	36.0	4.472	3.618	29.1	0.954	0.951	32.61	28.2	15.00	Up	44ce
	30.0	39.0	5.449	4.235	22.6	0.712	0.591	33.63	31.2	8.40	Up	44ce
	30.0	42.0	6.087	4.524	23.2	0.685	0.649	33.85	33.0	6.89	Up	44ce
	30.0	45.0	6.551	4.632	23.4	0.663	0.708	33.91	35.0	6.01	Up	44ce
<b>OptUp &gt;</b>	<b>30.0</b>	<b>45.6</b>	<b>6.549</b>	<b>4.583</b>	<b>23.4</b>	<b>0.660</b>	<b>0.720</b>	<b>33.84</b>	<b>35.5</b>	<b>6.04</b>	<b>Up</b>	<b>44ce</b>
	30.0	50.0	7.034	4.521	23.6	0.637	0.800	33.71	38.7	5.28	Up	44ce
	30.0	60.0	7.668	3.834	23.9	0.617	0.942	32.83	46.3	4.47	Up	44ce
	30.0	70.0	8.146	2.786	24.3	0.635	1.000	31.60	54.4	3.88	Up	44ce
	30.0	80.0	8.617	1.496	24.8	0.682	1.000	30.17	62.7	3.33	Up	44ce
	30.0	90.0	9.101	-0.000	25.4	0.746	1.000	28.59	71.4	2.83	Up	44ce
	30.0	100.0	9.569	-1.662	26.0	0.829	1.000	26.90	80.7	2.39	Up	44ce
	30.0	110.0	10.147	-3.471	26.6	0.931	1.000	25.20	90.3	1.94	Up	44ce
	30.0	120.0	10.708	-5.354	22.6	1.000	1.000	24.37	100.1	1.36	Up	44ce
	30.0	130.0	11.260	-7.238	28.8	0.883	1.000	21.67	111.7	1.30	Dn	44ce
	30.0	135.0	11.838	-8.371	29.7	0.973	1.000	20.68	117.0	1.06	Dn	44ce
	30.0	140.0	12.295	-9.419	23.8	1.000	1.000	20.62	121.2	0.75	Dn	44ce
	30.0	150.0	11.712	-10.143	11.8	1.000	1.000	20.47	134.2	0.50	Dn	44ce
<b>OptDn &gt;</b>	<b>30.0</b>	<b>158.5</b>	<b>10.975</b>	<b>10.214</b>	<b>7.3</b>	<b>1.000</b>	<b>1.000</b>	<b>20.14</b>	<b>147.3</b>	<b>0.40</b>	<b>Dn</b>	<b>44ce</b>
	30.0	160.0	10.867	-10.211	6.6	1.000	1.000	20.10	149.5	0.37	Dn	44ce
	30.0	170.0	10.230	-10.074	2.9	1.000	1.000	20.00	164.9	0.20	Dn	44ce
	30.0	180.0	9.732	-9.732	-0.0	1.000	1.000	20.27	180.0	-0.00	Dn	44ce

***Best Performance (cont)***

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