

4-DEC 85

GRAND PRIX PAC



Performance



Polar Plot



Wind Plot



Wind Equations



Upwind



Downwind

DESIGN #72/2 - FARR 11.6

FOR
B.F.A., INC.



DESIGN SYSTEMS



Hydrostatics



Comparative
Performance

TWA	AWS	AWA	BOAT SPEED	VMG	HEEL	LEEWAY	FLAT	REEF
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9.0 knots

Tack	36.0	13.7	21.7	4.939	3.996	12.3	4.9	1.00	1.00
	44.0	14.2	26.1	5.872	4.224	14.8	3.8	1.00	1.00
	44.5	14.2	26.4	5.926	4.225	14.9	3.7	1.00	1.00
	52.0	14.3	30.3	6.518	4.013	15.5	3.1	1.00	1.00
	60.0	14.0	34.8	6.873	3.436	14.5	2.7	1.00	1.00
	70.0	13.5	40.9	7.103	2.429	12.1	2.3	1.00	1.00

				Genoa	/	Spinnaker	v		
Gybe	75.9			7.299	1.267	14.3	2.0	1.00	1.00
	80.0	12.7	46.5	7.400	0.000	10.8	1.7	1.00	1.00
	90.0	11.9	53.0	7.291	-1.887	4.9	1.2	1.00	1.00
	105.0	10.3	63.9	6.914	-3.457	2.9	.8	1.00	1.00
	120.0	8.5	77.0	6.183	-4.372	1.5	.4	1.00	1.00
	135.0	6.7	95.9	5.532	-4.506	.9	.2	1.00	1.00
	144.5	5.9	112.6	5.186	-4.491	.6	.2	1.00	1.00
	150.0	5.6	123.1	4.601	-4.444	.3	.1	1.00	1.00
	165.0	5.2	151.7	4.307	-4.307	.2	.1	1.00	1.00
	180.0	5.2	179.9					1.00	1.00

13.0 knots

Tack	36.0	18.2	21.6	5.702	4.613	21.6	4.8	.74	1.00
	41.5	18.5	25.0	6.364	4.769	23.1	4.0	.74	.99
	44.0	18.5	26.6	6.586	4.738	23.4	3.7	.77	.98
	52.0	18.2	31.5	7.077	4.357	24.2	3.3	.88	.95
	60.0	17.7	36.5	7.409	3.704	24.9	3.1	.97	.94
	70.0	16.8	43.0	7.723	2.641	25.4	2.8	1.00	.97
Gybe	80.0	16.0	50.4	7.976	1.385	23.2	2.4	1.00	1.00
	86.2			8.174	0.000	25.0	2.1	1.00	1.00
	90.0	14.7	57.4	8.348	-2.161	13.1	1.5	1.00	1.00
	105.0	13.7	70.8	8.094	-4.047	4.5	.9	1.00	1.00
	120.0	11.9	85.3	7.597	-5.372	2.3	.5	1.00	1.00
	135.0	9.9	103.2	6.954	-6.022	1.2	.2	1.00	1.00
	150.0	8.4	126.0	6.474	-6.179	.7	.1	1.00	1.00
	162.6	7.8	148.2	6.392	-6.174	.7	.1	1.00	1.00
	165.0	7.7	152.5	6.013	-6.013	.4	.1	1.00	1.00
	180.0	7.7	179.9					1.00	1.00

TWA	AWS	AWA	BOAT SPEED	VMG	HEEL	LEEWAY	FLAT	REEF
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20.0 knots

Tack	36.0	25.5	22.5	6.022	4.872	23.6	5.2	.73	.80
	40.9	25.6	26.2	6.657	5.035	24.4	4.3	.80	.77
	44.0	25.5	28.4	6.929	4.985	24.9	4.1	.85	.76
	52.0	25.0	34.2	7.413	4.564	25.8	3.6	.96	.74
	60.0	24.2	40.0	7.764	3.882	26.5	3.3	1.00	.75
	70.0	23.1	47.8	8.125	2.779	26.7	2.9	1.00	.78
Gybe	80.0	21.9	55.9	8.465	1.470	26.8	2.6	1.00	.83
	89.4			Genoa / Spinnaker v					
	90.0	20.6	64.6	8.780	0.000	26.3	2.1	1.00	.82
	105.0	18.3	78.2	9.316	-2.411	26.7	1.6	1.00	.95
	120.0	17.6	93.4	9.680	-4.840	14.6	1.1	1.00	1.00
	135.0	15.9	111.2	9.285	-6.566	4.0	.6	1.00	1.00
Gybe	150.0	14.2	132.3	8.676	-7.514	2.4	.4	1.00	1.00
	165.0	13.3	155.6	8.253	-7.972	1.5	.2	1.00	1.00
	172.3	13.1	167.4	8.091	-8.018	1.2	.2	1.00	1.00
	180.0	13.1	179.9	7.979	-7.979	.9	.1	1.00	1.00

30.0 knots

Tack	36.0	35.1	22.4	5.706	4.616	25.3	6.8	.76	.63
	42.4	35.2	28.2	6.794	5.020	26.8	5.0	.86	.60
	44.0	35.1	29.5	6.957	5.004	27.1	4.7	.89	.59
	52.0	34.3	36.0	7.527	4.634	28.1	4.1	1.00	.58
	60.0	33.3	42.6	7.940	3.970	28.8	3.6	1.00	.59
	70.0	31.9	51.4	8.394	2.871	28.7	3.1	1.00	.62
Gybe	78.2			Genoa / Spinnaker v					
	80.0	30.5	60.8	8.823	1.532	28.3	2.5	1.00	.60
	90.0	28.8	70.2	9.279	0.000	28.7	2.1	1.00	.66
	105.0	26.2	85.3	10.022	-2.594	29.3	1.6	1.00	.78
	120.0	23.5	101.2	11.025	-5.512	30.6	1.2	1.00	.97
	135.0	24.0	116.5	11.563	-8.176	14.9	.8	1.00	1.00
Gybe	150.0	22.7	136.0	10.954	-9.486	5.1	.6	1.00	1.00
	165.0	21.7	157.6	10.391	-10.036	3.0	.3	1.00	1.00
	172.2	21.6	168.2	10.182	-10.087	2.5	.3	1.00	1.00
	180.0	21.6	179.8	10.029	-10.029	2.0	.2	1.00	1.00

UPRIGHT MEASUREMENT TRIM

DISPLACEMENT...	12691.8	WATER DENSITY..	64.00	FGD.....	4.06
LONG. CG.....	-1.18	LWL.....	33.02	FF.....	3.84
VERT. CG.....	-.65	MTI.....	1880.32	FA.....	2.86
VERT. CB.....	.52	PPI.....	1095.55	LBG.....	31.17
METACENTER.....	-4.70	WETTED SURF....	294.23	TOTAL SURF.....	877.90
LONG. CF.....	-2.30	RM/DEG.....	944.09	LCG TOT. SURF..	-1.89
VERT. CF.....	-.21	MAX. DRAFT.....	6.51	VCG TOT. SURF..	-2.01

UPRIGHT SAILING TRIM

DISPLACEMENT...	14406.8	WATER DENSITY..	64.00	FF.....	3.83
LONG. CG.....	-1.66	LWL.....	33.87	FA.....	2.65
VERT. CG.....	-.83	MTI.....	2146.55	CREW WT.....	1155.00
VERT. CB.....	.41	PPI.....	1171.57	GEAR WT.....	560.00
METACENTER.....	-4.69	WETTED SURF....	310.61	SAILING LEN....	33.48
LONG. CF.....	-2.87	RM/DEG.....	1055.30	EFF. B/Tc.....	4.90
VERT. CF.....	-.33	MAX. DRAFT.....	6.63	EFF. DRAFT.....	6.38

SAILING TRIM WITH HEEL

HEEL ANGLE	DWL @ FF	DWL @ FA	RIGHT'G ARM	LONG. C.B.	WETTED SURF.	SAILING LEN.	EFF. B/Tc
0.0	.30	.36	-0.000	-1.67	310.61	33.48	4.90
2.0	.30	.35	.146	-1.67	310.32	33.48	4.90
10.0	.29	.24	.688	-1.69	305.23	33.41	4.74
25.0	.22	-.31	1.392	-1.75	291.28	33.18	4.31
40.0	.03	-1.13	1.847	-1.74	280.27	32.35	3.85
60.0	-.29	-2.26	1.918	-1.59	256.42		
90.0	-1.20	-3.60	1.201	-1.37	230.13		
120.0	-2.48	-4.01	-.028	-1.47	237.41		
150.0	-3.66	-3.38	-.872	-1.80	250.22		
170.0	-4.08	-2.77	-.677	-1.84	275.08		

NOTES

1. Longitudinal positions are relative to station 5 (+Fwd, -Aft)
2. Vertical positions are relative to DWL (+Below -Abov), except DWL @FF and DWL @FA which locate the DWL relative to the LWL (positive=DWL Below LWL negative=DWL Above LWL)
3. Metacenter ht. is relative to the Center of Flotation, (CF)
4. Dimensions are in dec. feet, displacement in lbs., moments in ft-lbs. and water density in lbs/cu. ft.