

GRAND PRIX PAC



Performance



Polar Plot



Wind Plot



Wind Equations



Upwind



Downwind

DESIGN #121 - FARR 1020

FOR
SEA NYMPH BOATS, LTD



Hydrostatics



Comparative
Performance



DESIGN SYSTEMS

MASTER FILE: 121M00

SEA NYMPH BOATS, LTD
AUCKLAND
NEW ZEALAND

CUSTOMER CODE: B

FILE DATE: 4 Dec 1985

HOME:

WORK:

DIG_FILE: D007044221 "121 Dpp DWG #2 CUP

SERVICE CODE: P

BOAT NAME: DESIGN #121
MODIFIER: FARR 1020

DESIGNER: BRUCE FARR & ASSOC. INC
STOCK MODEL: FARR 1020

2. SPAR INFO

DT	DTT	DL	DLT	TL	HBIS
.374	.144	.492	.295	7.17	4.07
DTY	DTTY	DLY	DLTY	TLY	HBIYS
0	0	0	0	0	0

3. APPENDAGES INFO

TK	HK	CRK	CTK	TRK	TTK	SK	XTEK	CAK	LCBK
5.74	4.44	5.38	2.91	.499	.4	34	-1.978	.669	.438
TR	HR	CRR	CTR	TRR	TTR	SR	XTER	CAR	LCBR
3.98	4.17	2.18	1.38	.315	.174	16	-16.867	.669	.438
VOLK	WSK	CBXK	CBZK	VOLR	WSR	CBXR	CBZR	ECMA	XTEC
5.595	36.808	.743	3.221	1.155	14.024	-15.623	1.668	0	0

4. PROP INSTALLATION INFO

TYPE	PSA	PSL	PSD	SHL	SHD	PHL	PHD	PRD	PIPA
1	18	1.82	.082	.328	.164	.394	.141	1.33	.039

5. SAIL INFO

SPL	SMW	SL	I	J	LP	P	E	BAD	HBI
9.48	22.97	41.67	37.73	11.61	17.42	39.76	15.68	4.45	0
PY	EY	BADY	EB	YSF	YSMG	YSD	HBIY		
0	0	0	0	0	0	0	0		

6. FLOATATION INFO

FGO	LBG	FFS	FAS	FF	FA	RMC	BDK	FBI	SFJ
2.8	28.41	3.93	3	3.75	2.91	640	10.48	3.52	.049
WATER	DSPL	LCG	VCB	CW	XCW	ZCW	GW	XGW	ZGW
64	0	0	0	990	-5.68	-3.16	480	-2.84	0

TWA	AWS	AWA	BOAT SPEED	VMG	HEEL	LEEWAY	FLAT	FLAT
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3.0 knots

Tack	36.0	4.7	21.8	1.834	1.484	1.3	4.1	1.00	1.00
	44.0	5.0	25.8	2.254	1.621	1.4	3.1	1.00	1.00
	46.1	5.0	26.7	2.349	1.628	1.4	2.9	1.00	1.00
	52.0	5.1	29.3	2.577	1.586	1.5	2.5	1.00	1.00
	60.0	5.1	32.7	2.814	1.407	1.5	2.1	1.00	1.00
	70.0	5.0	37.2	2.994	1.024	1.4	1.8	1.00	1.00
	80.0	4.7	42.0	3.057	.531	1.3	1.5	1.00	1.00
----- ^ Genoa / Spinnaker v -----									
Gybe	82.7								
	90.0	4.5	46.3	3.196	0.000	1.4	1.3	1.00	1.00
	105.0	3.8	54.9	3.113	-.806	1.1	1.0	1.00	1.00
	120.0	3.0	68.4	2.753	-1.377	.7	.7	1.00	1.00
	135.0	2.2	90.0	2.276	-1.609	.3	.4	1.00	1.00
	141.9	2.0	102.8	2.066	-1.625	.2	.3	1.00	1.00
	150.0	1.8	119.8	1.836	-1.590	.1	.2	1.00	1.00
	165.0	1.7	150.7	1.579	-1.525	0.0	.1	1.00	1.00
	180.0	1.7	179.9	1.440	-1.440	0.0	.1	1.00	1.00

6.0 knots

Tack	36.0	9.3	21.9	3.490	2.824	3.5	4.4	1.00	1.00
	44.0	9.7	26.3	4.186	3.011	3.8	3.4	1.00	1.00
	44.4	9.7	26.5	4.216	3.012	3.8	3.3	1.00	1.00
	52.0	9.8	30.3	4.688	2.886	3.9	2.8	1.00	1.00
	60.0	9.8	34.2	5.050	2.525	3.9	2.4	1.00	1.00
	70.0	9.5	39.2	5.322	1.820	3.6	2.0	1.00	1.00
	76.9								
----- ^ Genoa / Spinnaker v -----									
Gybe	80.0	9.1	44.1	5.568	.967	3.9	1.7	1.00	1.00
	90.0	8.5	48.9	5.794	0.000	3.8	1.5	1.00	1.00
	105.0	7.2	59.0	5.548	-1.436	2.8	1.1	1.00	1.00
	120.0	5.7	73.1	4.974	-2.487	1.7	.7	1.00	1.00
	135.0	4.4	93.6	4.259	-3.012	.9	.4	1.00	1.00
	144.0	3.9	109.6	3.826	-3.096	.5	.2	1.00	1.00
	150.0	3.6	121.5	3.543	-3.069	.3	.2	1.00	1.00
	165.0	3.4	151.2	3.095	-2.989	.2	.1	1.00	1.00
	180.0	3.4	179.9	2.833	-2.833	.1	.1	1.00	1.00

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

Tack	36.0	13.5	21.8	4.796	3.880	11.0	4.9	1.00	1.00
	44.0	13.9	26.3	5.709	4.107	13.3	3.7	1.00	1.00
	44.0	13.9	26.3	5.709	4.107	13.3	3.7	1.00	1.00
	52.0	14.0	30.7	6.283	3.868	13.7	3.1	1.00	1.00
	60.0	13.8	35.4	6.587	3.294	12.6	2.7	1.00	1.00
	70.0	13.2	41.6	6.782	2.320	10.3	2.3	1.00	1.00

	72.6			Genoa	/	Spinnaker	v		
	80.0	12.4	47.1	7.030	1.221	13.6	2.1	1.00	1.00
	90.0	11.6	53.9	7.105	0.000	9.8	1.8	1.00	1.00
	105.0	10.1	64.9	6.988	-1.809	4.6	1.3	1.00	1.00
	120.0	8.3	78.2	6.640	-3.320	2.8	.8	1.00	1.00
	135.0	6.7	96.8	6.003	-4.245	1.5	.4	1.00	1.00
Gybe	144.6	5.9	113.4	5.389	-4.395	.9	.2	1.00	1.00
	150.0	5.6	123.6	5.059	-4.381	.7	.2	1.00	1.00
	165.0	5.2	152.0	4.486	-4.333	.4	.1	1.00	1.00
	180.0	5.2	179.9	4.134	-4.134	.2	.1	1.00	1.00

13.0 knots

Tack	36.0	18.0	21.3	5.632	4.556	22.9	5.0	.80	1.00
	40.6	18.1	24.1	6.159	4.679	24.4	4.3	.80	1.00
	44.0	18.1	26.2	6.435	4.629	25.2	4.0	.81	1.00
	52.0	17.8	31.1	6.879	4.235	26.5	3.6	.90	.98
	60.0	17.2	36.0	7.196	3.598	27.6	3.3	.98	.98
	70.0	16.5	43.1	7.498	2.564	26.0	2.9	1.00	1.00
	80.0	15.9	51.3	7.694	1.336	20.4	2.5	1.00	1.00

	80.8			Genoa	/	Spinnaker	v		
	90.0	14.6	58.1	7.932	0.000	23.6	2.1	1.00	1.00
	105.0	13.5	71.6	8.031	-2.079	12.2	1.5	1.00	1.00
	120.0	11.7	86.3	7.768	-3.884	4.3	.9	1.00	1.00
	135.0	9.8	104.3	7.301	-5.162	2.2	.5	1.00	1.00
	150.0	8.4	126.9	6.710	-5.811	1.2	.2	1.00	1.00
Gybe	163.3	7.8	149.8	6.263	-5.997	.7	.1	1.00	1.00
	165.0	7.7	152.9	6.205	-5.994	.7	.1	1.00	1.00
	180.0	7.8	179.9	5.769	-5.769	.4	.1	1.00	1.00

	TWA	AWS	AWA	BOAT SPEED	VMG	HEEL	LEEWAY	FLAT	FLAT
20.0 knots									
Tack	36.0	25.1	22.0	5.937	4.803	25.5	5.4	.76	.82
	40.0	25.1	25.0	6.414	4.915	26.5	4.7	.78	.81
	44.0	25.0	27.9	6.740	4.848	27.0	4.3	.86	.78
	52.0	24.4	33.5	7.201	4.433	28.5	3.9	.97	.77
	60.0	23.5	39.3	7.546	3.773	29.6	3.5	1.00	.79
	70.0	22.3	47.0	7.902	2.703	30.0	3.1	1.00	.83
	80.0	21.0	55.2	8.238	1.431	30.1	2.7	1.00	.88
	89.3			Genoa / Spinnaker v					
	90.0	19.7	64.2	8.554	0.000	29.6	2.2	1.00	.86
	105.0	17.5	78.1	9.101	-2.356	30.1	1.7	1.00	1.00
	120.0	17.5	94.0	9.351	-4.676	13.8	1.2	1.00	1.00
	135.0	15.8	112.0	8.931	-6.316	3.9	.6	1.00	1.00
	150.0	14.2	132.9	8.357	-7.237	2.4	.4	1.00	1.00
	165.0	13.3	156.0	7.939	-7.668	1.5	.2	1.00	1.00
Gybe	169.9	13.2	163.7	7.815	-7.693	1.3	.2	1.00	1.00
	180.0	13.2	179.9	7.599	-7.599	1.0	.1	1.00	1.00

30.0 knots									
Tack	36.0	34.5	21.8	5.638	4.561	27.2	7.0	.76	.65
	41.8	34.5	27.0	6.565	4.895	29.0	5.3	.86	.62
	44.0	34.3	28.7	6.773	4.872	29.6	5.0	.87	.62
	52.0	33.4	35.1	7.323	4.508	30.8	4.4	1.00	.61
	60.0	32.3	41.7	7.730	3.865	31.5	3.9	1.00	.62
	70.0	30.8	50.6	8.178	2.797	31.5	3.3	1.00	.65
	78.3			Genoa / Spinnaker v					
	80.0	29.3	60.2	8.606	1.494	31.2	2.7	1.00	.63
	90.0	27.6	69.8	9.067	0.000	31.6	2.3	1.00	.69
	105.0	25.0	85.3	9.852	-2.550	32.2	1.7	1.00	.82
	120.0	22.8	101.3	10.950	-5.475	32.1	1.2	1.00	1.00
	135.0	23.8	116.8	11.275	-7.972	14.5	.8	1.00	1.00
	150.0	22.6	136.3	10.619	-9.197	5.0	.6	1.00	1.00
	165.0	21.7	157.8	10.014	-9.673	3.0	.4	1.00	1.00
Gybe	168.4	21.6	162.8	9.890	-9.687	2.7	.3	1.00	1.00
	180.0	21.7	179.8	9.534	-9.534	2.0	.2	1.00	1.00

UPRIGHT MEASUREMENT TRIM

DISPLACEMENT...	8970.0	WATER DENSITY..	64.00	FGD.....	2.80
LONG. CG.....	-1.31	LWL.....	29.55	FF.....	3.75
VERT. CG.....	-.25	MTI.....	1305.18	FA.....	2.91
VERT. CB.....	.51	PPI.....	870.94	LBG.....	28.41
METACENTER.....	-4.22	WETTED SURF....	231.75	TOTAL SURF.....	732.25
LONG. CF.....	-2.16	RM/DEG.....	641.46	LCG TOT. SURF..	-1.99
VERT. CF.....	-.13	MAX. DRAFT.....	5.87	VCG TOT. SURF..	-1.97

UPRIGHT SAILING TRIM

DISPLACEMENT...	10440.0	WATER DENSITY..	64.00	FF.....	3.73
LONG. CG.....	-1.80	LWL.....	30.09	FA.....	2.69
VERT. CG.....	-.51	MTI.....	1519.00	CREW WT.....	990.00
VERT. CB.....	.40	PPI.....	939.12	GEAR WT.....	480.00
METACENTER.....	-4.14	WETTED SURF....	247.13	SAILING LEN....	29.96
LONG. CF.....	-2.74	RM/DEG.....	707.13	EFF. B/Tc.....	4.95
VERT. CF.....	-.26	MAX. DRAFT.....	6.00	EFF. DRAFT.....	5.80

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	.20	.31	-0.000	-1.80	247.13	29.96	4.95
2.0	.20	.30	.135	-1.80	247.18	29.97	4.94
10.0	.19	.21	.646	-1.83	244.38	30.20	4.74
25.0	.13	-.25	1.352	-1.88	234.02	30.20	4.23
40.0	-.05	-.97	1.789	-1.90	223.34	29.28	3.81
60.0	-.36	-2.04	2.003	-1.76	202.52		
90.0	-1.26	-3.35	1.485	-1.53	183.70		
120.0	-2.54	-3.81	.406	-1.59	188.48		
150.0	-3.76	-3.34	-.417	-1.90	195.53		
170.0	-4.22	-2.84	-.329	-2.00	204.27		

NOTES

1. Longitudinal positions are relative to station 5 (+Fwd, -Aft)
2. Vertical positions are relative to DWL (+Below -Aft), 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.