

Design hydrostatics report

Apotheosis

Designer	Milton Miller		
Created by	DELFTShip Professional		
Comment	Preliminary plans		
Filename	Trimaran.fbm		
Design length	64.916 (ft)	Midship location	32.458 (ft)
Length over all	64.916 (ft)	Relative water density	1.0250
Design beam	17.000 (ft)	Mean shell thickness	0.2000 (ft)
Maximum beam	36.985 (ft)	Appendage coefficient	1.0000
Design draft	3.000 (ft)		

Volume properties		Waterplane properties	
Moulded volume	931.05 (ft ³)	Length on waterline	64.916 (ft)
Total displaced volume	1075.72 (ft ³)	Beam on waterline	36.402 (ft)
Displacement	30.73 (long ton)	Entrance angle	13.567 (Degr.)
Block coefficient	0.3249	Waterplane area	620.2 (ft ²)
Prismatic coefficient	0.5488	Waterplane coefficient	0.5620
Vert. prismatic coefficient	0.5004	Waterplane center of floatation	30.172 (ft)
Wetted surface area	723.4 (ft ²)	Transverse moment of inertia	14235 (ft ⁴)
Longitudinal center of buoyancy	31.746 (ft)	Longitudinal moment of inertia	120683 (ft ⁴)
Longitudinal center of buoyancy	-1.097 %		
Vertical center of buoyancy	1.945 (ft)		

Midship properties		Initial stability	
Midship section area	30.2 (ft ²)	Transverse metacentric height	17.234 (ft)
Midship coefficient	0.5920	Longitudinal metacentric height	131.57 (ft)

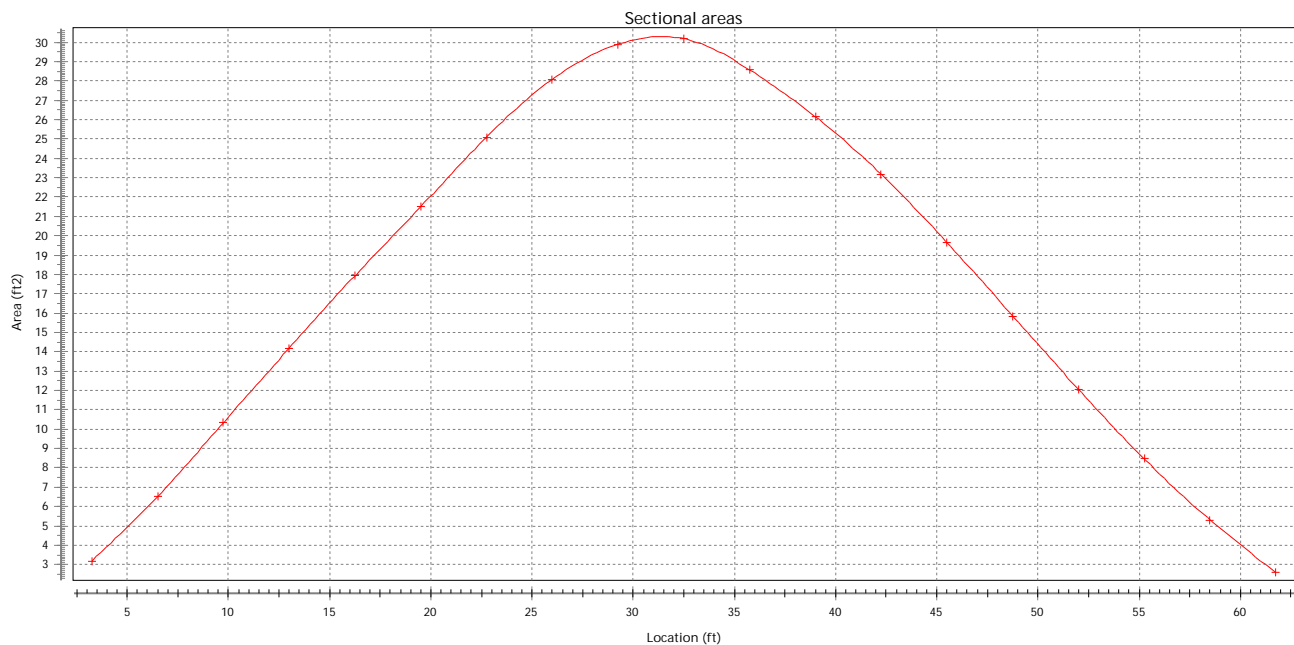
Lateral plane	
Lateral area	181.7 (ft ²)
Longitudinal center of effort	31.137 (ft)
Vertical center of effort	1.537 (ft)

The following layer properties are calculated for both sides of the ship

Location	Area (ft ²)	Thickness (ft)	Weight (long ton)	LCG (ft)	TCG (ft)	VCG (ft)
Hull body	1078.3	0.200	4.21	32.319	0.000 (CL)	6.709
Transom	109.0	0.200	0.43	1.768	0.000 (CL)	7.269
Below waterline	648.4	0.200	2.53	31.504	0.000 (CL)	1.423
Blade	17.2	0.010	0.00	64.459	0.000 (CL)	7.407
Deck	714.2	0.150	1.49	29.775	0.000 (CL)	11.269
Pilot house	388.3	0.100	0.76	23.975	0.000 (CL)	13.483
Tunnels	20.1	0.000	0.00	2.000	0.000 (CL)	1.954
Spade rudder	36.2	0.300	0.30	1.284	0.000 (CL)	-0.232
Amas	384.6	0.100	0.54	28.578	0.000 (CL)	4.788
Back arms	68.5	0.100	0.19	22.000	0.000 (CL)	8.135
Front arms	68.5	0.100	0.19	33.000	0.000 (CL)	8.135
Platforms	213.2	0.100	0.30	29.368	0.000 (CL)	9.774
Daggerboards	41.6	0.000	0.00	35.062	0.000 (CL)	2.500

Location	Area (ft ²)	Thickness (ft)	Weight (long ton)	LCG (ft)	TCG (ft)	VCG (ft)
Front planks	69.1	0.100	0.10	33.750	0.000 (CL)	8.236
Back planks	69.1	0.100	0.10	22.750	0.000 (CL)	8.236
Total	3926.5		11.13	28.726	0.000 (CL)	6.478

Sectional areas									
Location (ft)	Area (ft ²)	Location (ft)	Area (ft ²)	Location (ft)	Area (ft ²)	Location (ft)	Area (ft ²)	Location (ft)	Area (ft ²)
3.250	3.2	16.250	17.9	29.250	29.9	42.250	23.2	55.250	8.5
6.500	6.5	19.500	21.5	32.500	30.2	45.500	19.6	58.500	5.3
9.750	10.3	22.750	25.1	35.750	28.6	48.750	15.8	61.750	2.6
13.000	14.2	26.000	28.1	39.000	26.1	52.000	12.0		



NOTE 1: Draft (and all other vertical heights) is measured from base Z=0.000

NOTE 2: All calculated coefficients based on project length, draft and beam.