

Design hydrostatics report.

Designer

Created by

Comment

Filename

Powerboat 22 Exhale.fbm

Design length	22.000 (ft)	Midship location	11.000 (ft)
Length over all	21.428 (ft)	Relative water density	1.025
Design beam	8.500 (ft)	Mean shell thickness	0.0000 (ft)
Maximum beam	8.205 (ft)	Appendage coefficient	1.0000
Design draught	0.725 (ft)		

Volume properties		Waterplane properties	
Moulded volume	51.894 (ft ³)	Length on waterline	19.469 (ft)
Total displaced volume	51.894 (ft ³)	Beam on waterline	7.909 (ft)
Displacement	1.482 (tons)	Entrance angle	10.442 (Degr.)
Block coefficient	0.4651	Waterplane area	119.86 (ft ²)
Prismatic coefficient	0.7717	Waterplane coefficient	0.7784
Vert. prismatic coefficient	0.5974	Waterplane center of floatation	8.126 (ft)
Wetted surface area	130.33 (ft ²)	Transverse moment of inertia	503.26 (ft ⁴)
Longitudinal center of buoyancy	8.174 (ft)	Longitudinal moment of inertia	2718.5 (ft ⁴)
Longitudinal center of buoyancy	-14.518 %		
Vertical center of buoyancy	0.471 (ft)		
Total length of submerged body	19.469 (ft)		
Total beam of submerged body	7.909 (ft)		

Midship properties		Initial stability	
Midship section area	3.454 (ft ²)	Transverse metacentric height	10.169 (ft)
Midship coefficient	0.6026	Longitudinal metacentric height	52.856 (ft)

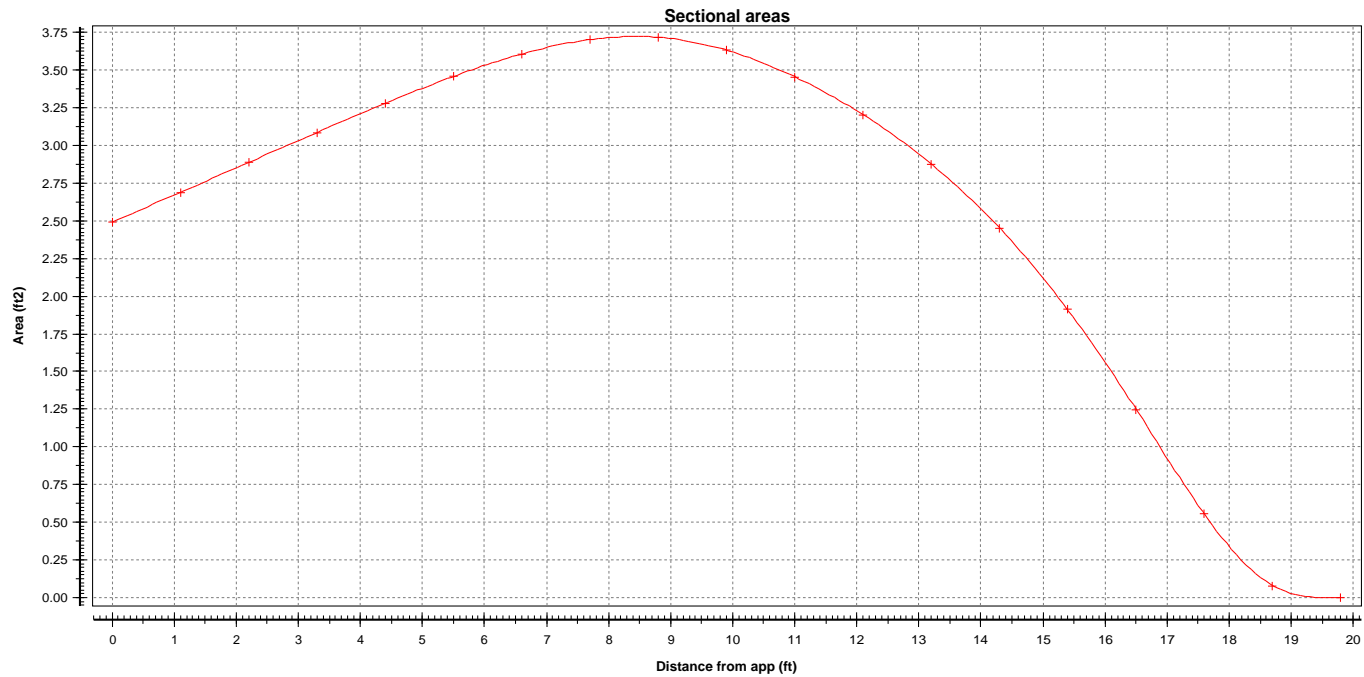
Lateral plane	
Lateral area	13.305 (ft ²)
Longitudinal center of effort	9.289 (ft)
Vertical center of effort	0.368 (ft)

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

Location	Area	Thickness	Weight	LCG	TCG	VCG
	(ft ²)		(tons)	(ft)	(ft)	(ft)
Layer 0	227.28	0.000	0.000	8.780	0.000 (CL)	0.882

Sectional areas									
Location	Area	Location	Area	Location	Area	Location	Area	Location	Area
(ft)	(ft ²)	(ft)	(ft ²)	(ft)	(ft ²)	(ft)	(ft ²)	(ft)	(ft ²)
0.000	2.492	4.400	3.278	8.800	3.716	13.200	2.877	17.600	0.556
1.100	2.688	5.500	3.458	9.900	3.632	14.300	2.452	18.700	0.079
2.200	2.887	6.600	3.606	11.000	3.454	15.400	1.911	19.800	0.000

Sectional areas									
Location	Area	Location	Area	Location	Area	Location	Area	Location	Area
(ft)	(ft ²)	(ft)	(ft ²)	(ft)	(ft ²)	(ft)	(ft ²)	(ft)	(ft ²)
3.300	3.085	7.700	3.702	12.100	3.204	16.500	1.249		



NOTE 1: Draught (and all other vertical heights) is measured above base Z=
NOTE 2: All calculated coefficients based on actual dimensions of submerged body.