

Design hydrostatics report

Designer

Created by

Comment

Filename

Frigate.fbm

Design length	30.000 (m)	Midship location	15.000 (m)
Length over all	32.672 (m)	Relative water density	1.0250
Design beam	7.000 (m)	Mean shell thickness	0.0000 (m)
Maximum beam	6.722 (m)	Appendage coefficient	1.0000
Design draft	2.500 (m)		

Volume properties		Waterplane properties	
Moulded volume	280.03 (m ³)	Length on waterline	30.084 (m)
Total displaced volume	280.03 (m ³)	Beam on waterline	6.711 (m)
Displacement	287.03 (tonnes)	Entrance angle	66.116 (Degr.)
Block coefficient	0.5334	Waterplane area	160.18 (m ²)
Prismatic coefficient	0.6562	Waterplane coefficient	0.7628
Vert. prismatic coefficient	0.6993	Waterplane center of floatation	15.036 (m)
Wetted surface area	245.66 (m ²)	Transverse moment of inertia	465.41 (m ⁴)
Longitudinal center of buoyancy	16.000 (m)	Longitudinal moment of inertia	8971.7 (m ⁴)
Longitudinal center of buoyancy	3.325 %		
Vertical center of buoyancy	1.495 (m)		

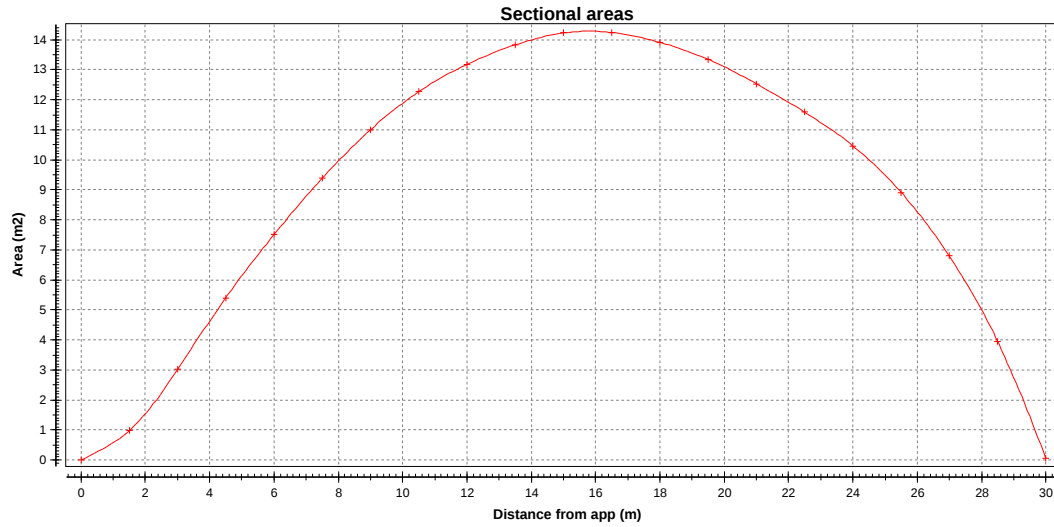
Midship properties		Initial stability	
Midship section area	14.224 (m ²)	Transverse metacentric height	3.157 (m)
Midship coefficient	0.8128	Longitudinal metacentric height	33.534 (m)

Lateral plane	
Lateral area	73.239 (m ²)
Longitudinal center of effort	15.007 (m)
Vertical center of effort	1.265 (m)

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

Location	Area (m ²)	Thickness (m)	Weight (tonnes)	LCG (m)	TCG (m)	VCG (m)
Hull	445.40	0.000	0.000	14.377	0.000 (CL)	2.330
Masts	95.343	0.000	0.000	19.114	0.000 (CL)	6.230
Keel	34.655	0.000	0.000	20.643	0.000 (CL)	0.615
Total	575.40		0.000	0.000	0.000 (CL)	0.000

Sectional areas									
Location (m)	Area (m ²)	Location (m)	Area (m ²)	Location (m)	Area (m ²)	Location (m)	Area (m ²)	Location (m)	Area (m ²)
0.000	0.000	7.500	9.384	15.000	14.224	22.500	11.582	30.000	0.058
1.500	0.981	9.000	11.000	16.500	14.239	24.000	10.462		
3.000	3.022	10.500	12.268	18.000	13.910	25.500	8.909		
4.500	5.404	12.000	13.176	19.500	13.343	27.000	6.794		
6.000	7.506	13.500	13.825	21.000	12.529	28.500	3.951		



NOTE1: Draft (and all other vertical heights) is measured above base Z=

NOTE2: All calculated coefficients based on project length, draft and beam.