

Default Project

Hydrostatics & Stability Analysis

Default Company

Report Time: Monday, December 14, 2020, 11:54:33 AM

Model Name: C:\Users\Office\Google Drive\Boat\FPB 70\Hull 6.2.3dm

**Condition Summary****Load Condition Parameters**

Condition	Weight / Sinkage	LCG / Trim	TCG / Heel	VCG (ft)
Condition 1	0.000 ft	0.000 deg	0.000 deg	2

Resulting Model Attitude and Hydrostatic Properties

Condition	Sinkage (ft)	Trim(deg)	Heel(deg)	Ax(ft^2)
Condition 1	0.000	0.000	0.000	46.94

Condition	Displacement Weight (lbf)	LCB(ft)	TCB(ft)	VCB(ft)	Wet Area (ft^2)
Condition 1	124721.981	39.149	0.000	-1.382	1206.713

Condition	Awp(ft^2)	LCF(ft)	TCF(ft)	VCF(ft)
Condition 1	861.292	42.557	0.000	0.000

Condition	BMt(ft)	BMI(ft)	GMt(ft)	GMI(ft)
Condition 1	6.348	145.730	2.966	142.348

Condition	Cb	Cp	Cwp	Cx	Cws	Cvp
Condition 1	0.332	0.549	0.734	0.605	3.145	0.452

Notes

1. Locations such as the center of buoyancy and center of flotation are measured from the origin in the Rhinoceros world coordinate system.

2. The orientation of the model for an Orca3D hydrostatics solution is defined in terms of "sinkage," "trim," and "heel." The sinkage value represents the depth of the body origin (i.e. the Rhino world origin) below the resultant flotation plane, and is sometimes referred to as "origin depth." Heel and trim represent angular rotations about the Rhino longitudinal and transverse axes, respectively, and are taken in that order. For a more detailed description of these terms see the Orca3D documentation.

3. Hull form coefficients are non-dimensionalized by the waterline length.

4. Calculation of Cp and Cx use Orca sections to determine Ax. If no Orca sections are defined, these values will be reported as zero.

Default Project

Hydrostatics & Stability Analysis

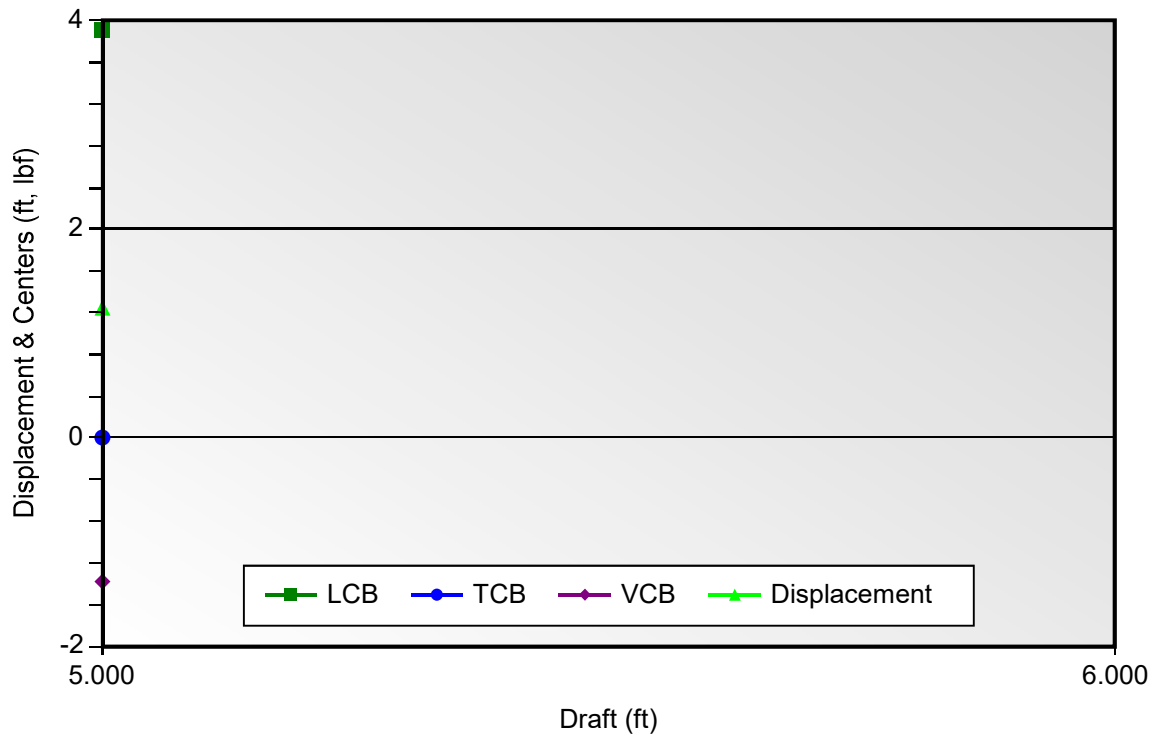
Default Company

Report Time: Monday, December 14, 2020, 11:54:33 AM

Model Name: C:\Users\Office\Google Drive\Boat\FPB 70\Hull 6.2.3dm



Volumetric Properties



Default Project

Hydrostatics & Stability Analysis

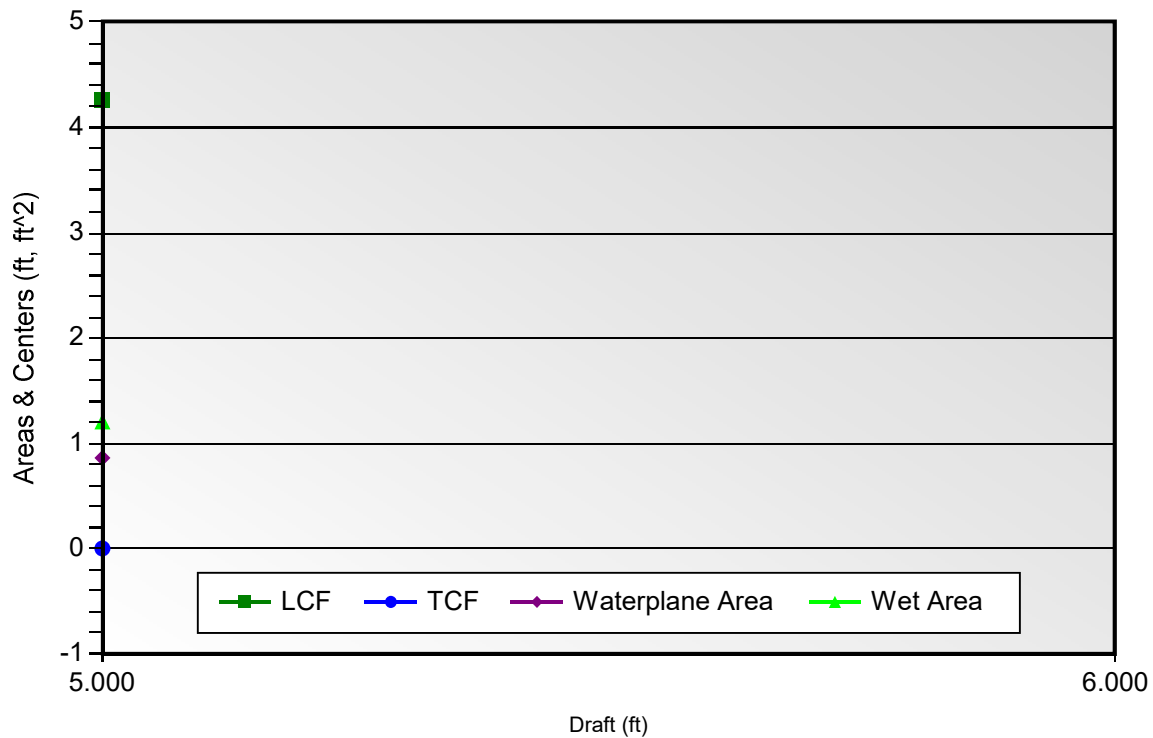
Default Company

Report Time: Monday, December 14, 2020, 11:54:33 AM

Model Name: C:\Users\Office\Google Drive\Boat\FPB 70\Hull 6.2.3dm



Area Properties



Default Project

Hydrostatics & Stability Analysis

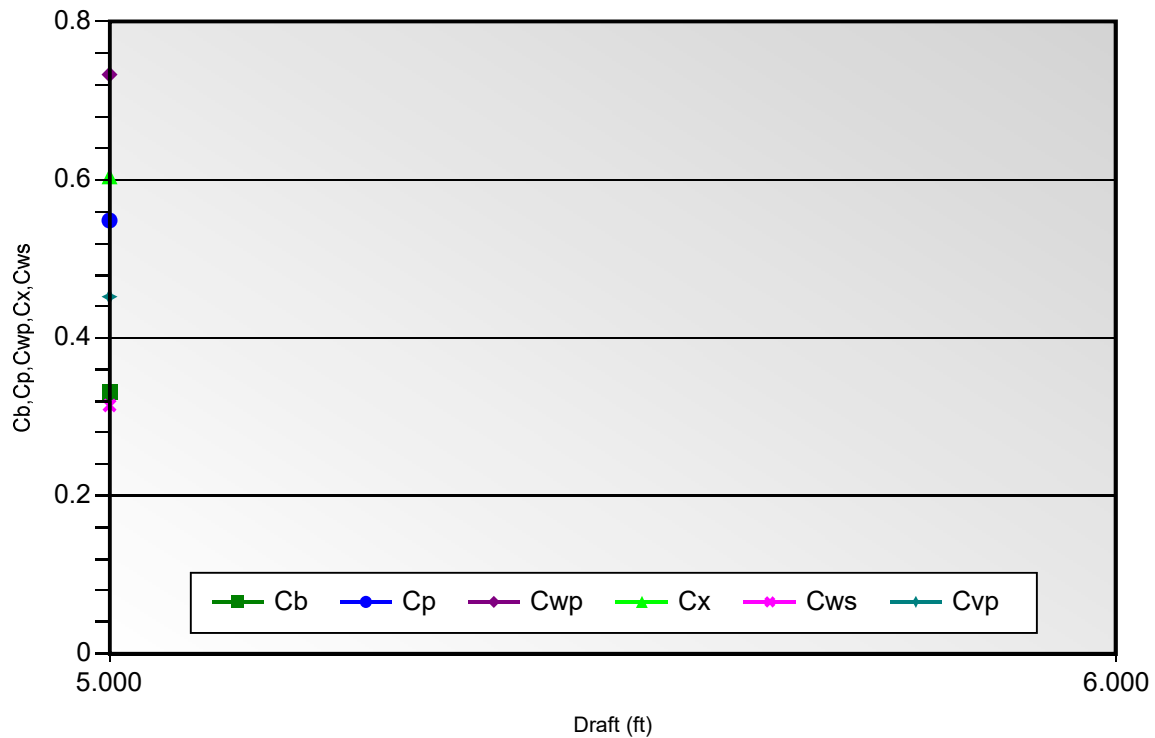
Default Company

Report Time: Monday, December 14, 2020, 11:54:33 AM

Model Name: C:\Users\Office\Google Drive\Boat\FPB 70\Hull 6.2.3dm



Hull Form Coefficients



Default Project

Hydrostatics & Stability Analysis

Default Company

Report Time: Monday, December 14, 2020, 11:54:33 AM

Model Name: C:\Users\Office\Google Drive\Boat\FPB 70\Hull 6.2.3dm



Default Project

Hydrostatics & Stability Analysis

Default Company

Report Time: Monday, December 14, 2020, 11:54:33 AM

Model Name: C:\Users\Office\Google Drive\Boat\FPB 70\Hull 6.2.3dm



Object Type	Name	ID
polysurface	Foil	{e7e7259b-e51e-47f4-b1fd-ea7f6b6d5de2}
polysurface	Unnamed Rhino Object	{0233174e-4cf2-4acc-ae15-ffcd0c2b5cbb}
surface	Unnamed Rhino Object	{eec075ec-acce-4001-a0da-5c10b6543308}
surface	Unnamed Rhino Object	{f6cc3d25-6d67-481f-9d6e-b27443684907}
polysurface	Foil	{a90912d7-aac5-48e2-9dd3-7c81353321eb}
surface	Unnamed Rhino Object	{87133bae-49eb-436b-b5bf-3ae7c25f1718}
surface	Unnamed Rhino Object	{cfe1b5c5-ec55-41af-a918-68bf8fe44b6}
surface	Unnamed Rhino Object	{1ae1cf52-90cd-4e5d-9240-ffd654ded504}
surface	Unnamed Rhino Object	{93016c94-28a7-4ec0-8a2f-65f06d642005}
polysurface	Unnamed Rhino Object	{e112f6fd-07b9-4eec-a18a-52c6680ae7ba}

Default Project

Hydrostatics & Stability Analysis

Default Company

Report Time: Monday, December 14, 2020, 11:54:33 AM

Model Name: C:\Users\Office\Google Drive\Boat\FPB 70\Hull 6.2.3dm



Condition Name=Condition 1, Model Sinkage=0.00, Model Trim=0.00, Model Heel=0.00

General Info

Analysis Type	FreeFloatEquilibrium	Up Direction = Positive_Z
		Fwd Direction = Negative_X

Surface Meshing Parameters

Density	1	Minimum edge length	0.0001 ft
Maximum angle	0	Maximum edge length	0 ft
Maximum aspect ratio	0	Max distance, edge to surf.	0 ft
Minimum initial grid quads	0	Jagged seams	False
Refine mesh	True	Simple planes	True

Load Condition Parameters

Model Sinkage	0.000 ft
Model Trim	0.000 deg
Model Heel	0.000 deg
VCG	2 ft
Fluid Type	Seawater
Fluid Density	1.991 slug/ft^3
Mirror Geometry	True

Resultant Model Attitude

Heel Angle	0.000 deg	Sinkage	0.000 ft
Trim Angle	0.000 deg		

Overall Dimensions

Length Overall, LOA	78.000 ft	Loa / Boa	4.333
Beam Overall, Boa	18.000 ft	Boa / D	1.125
Depth Overall, D	16.000 ft		

Default Project

Hydrostatics & Stability Analysis

Default Company

Report Time: Monday, December 14, 2020, 11:54:33 AM

Model Name: C:\Users\Office\Google Drive\Boat\FPB 70\Hull 6.2.3dm

**Waterline Dimensions**

Waterline Length, Lwl	75.608 ft	Lwl / Bwl	4.869
Waterline Beam, Bwl	15.530 ft	Bwl / T	3.106
Navigational Draft, T	5.000 ft	D / T	3.200

Volumetric Values

Displacement Weight	124721.981 lbf	Displ-Length Ratio	128.823
Volume	1947.416 ft ³		
LCB	39.149 ft	FB/Lwl	0.486
TCB	0.000 ft	AB/Lwl	0.514
VCB	-1.382 ft	TCB / Bwl	0.000
Wetted Surface Area	1206.713 ft ²		
Moment To Trim	19567.991 lbf-ft/in		

Waterplane Values

Waterplane Area, Awp	861.292 ft ²		
LCF	42.557 ft	FF/Lwl	0.531
TCF	0.000 ft	AF/Lwl	0.469
Weight To Immerse	4596.778 lbf/in	TCF / Lwl	0.000

Sectional Parameters

Ax	46.944 ft ²		
Ax Location	42.900 ft	Ax Location / Lwl	0.536

Hull Form Coefficients

Cb	0.332	Cx	0.605
Cp	0.549	Cwp	0.734
Cvp	0.452	Cws	3.145

Static Stability Parameters

Default Project

Hydrostatics & Stability Analysis

Default Company

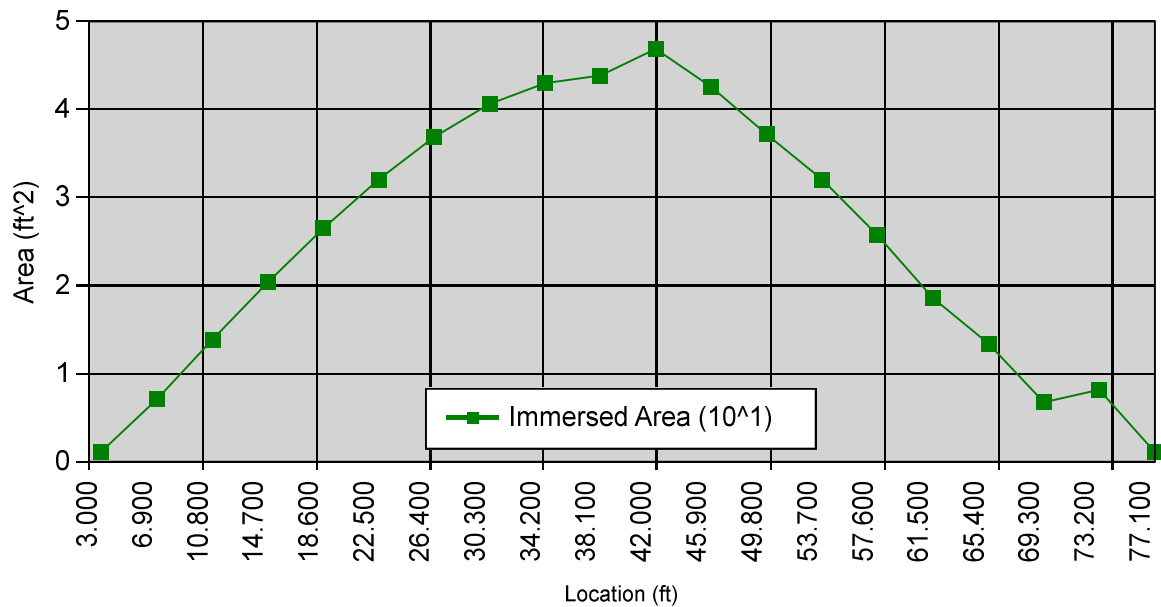
Report Time: Monday, December 14, 2020, 11:54:33 AM

Model Name: C:\Users\Office\Google Drive\Boat\FPB 70\Hull 6.2.3dm



I(transverse)	12362.961 ft ⁴	I(longitudinal)	283797.321 ft ⁴
BMt	6.348 ft	BMI	145.730 ft
GMt	2.966 ft	GMI	142.348 ft
Mt	4.966 ft	MI	144.348 ft

Station Data



Default Project

Hydrostatics & Stability Analysis

Default Company

Report Time: Monday, December 14, 2020, 11:54:33 AM

Model Name: C:\Users\Office\Google Drive\Boat\FPB 70\Hull 6.2.3dm



Location (ft)	Immersed Area (ft^2)	Immersed Girth (ft)
3.900	1.237	3.565
7.800	7.225	7.079
11.700	13.960	9.746
15.600	20.477	11.957
19.500	26.562	13.803
23.400	32.125	15.315
27.300	36.954	16.563
31.200	40.693	17.519
35.100	43.067	18.163
39.000	43.920	18.489
42.900	46.944	31.219
46.800	42.640	31.935
50.700	37.253	17.620
54.600	32.122	16.708
58.500	25.808	15.415
62.400	18.685	13.809
66.300	13.482	16.750
70.200	6.834	18.145
74.100	8.278	16.566
78.000	1.209	5.747

Default Project

Hydrostatics & Stability Analysis

Default Company

Report Time: Monday, December 14, 2020, 11:54:33 AM

Model Name: C:\Users\Office\Google Drive\Boat\FPB 70\Hull 6.2.3dm



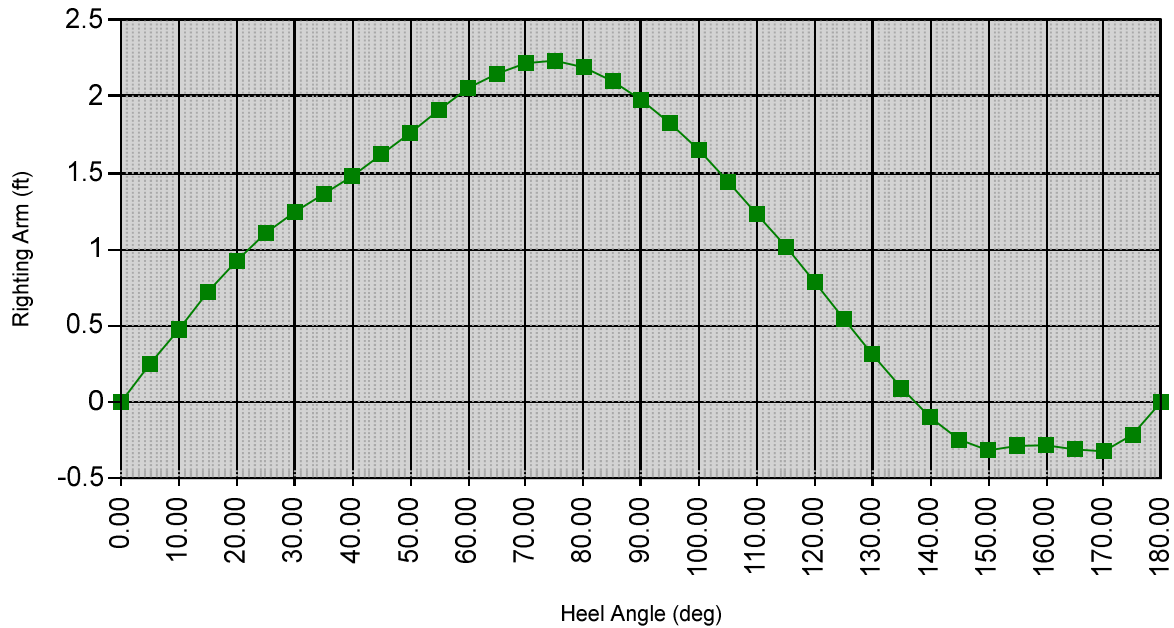
Default Project

Hydrostatics & Stability Analysis

Default Company

Report Time: Monday, December 14, 2020, 11:54:33 AM

Model Name: C:\Users\Office\Google Drive\Boat\FPB 70\Hull 6.2.3dm

**Stability Curve**

Heel(deg)	Trim(deg)	Righting Arm (ft)	Righting Moment (lbf-ft)
0.000	0.000	0.000	0.00
5.000	-0.025	0.249	31098.88
10.000	-0.092	0.473	58966.95
15.000	-0.190	0.721	89940.10
20.000	-0.323	0.926	115454.00
25.000	-0.493	1.105	137807.40
30.000	-0.683	1.243	154991.44
35.000	-0.876	1.361	169689.06
40.000	-1.069	1.479	184481.96
45.000	-1.260	1.622	202302.44
50.000	-1.453	1.761	219630.12

Default Project

Hydrostatics & Stability Analysis

Default Company

Report Time: Monday, December 14, 2020, 11:54:33 AM

Model Name: C:\Users\Office\Google Drive\Boat\FPB 70\Hull 6.2.3dm



Heel(deg)	Trim(deg)	Righting Arm (ft)	Righting Moment (lbf-ft)
55.000	-1.571	1.913	238650.63
60.000	-1.752	2.056	256433.33
65.000	-1.949	2.150	268093.51
70.000	-2.113	2.219	276699.82
75.000	-2.256	2.236	278854.10
80.000	-2.371	2.192	273399.93
85.000	-2.459	2.102	262182.13
90.000	-2.519	1.977	246597.15
95.000	-2.551	1.824	227544.61
100.000	-2.550	1.648	205510.46
105.000	-2.509	1.443	179987.99
110.000	-2.418	1.228	153179.59
115.000	-2.285	1.016	126767.30
120.000	-2.126	0.784	97757.24
125.000	-1.940	0.544	67872.38
130.000	-1.726	0.310	38617.00
135.000	-1.494	0.089	11085.47
140.000	-1.252	-0.103	(12900.24)
145.000	-1.007	-0.248	(30989.29)
150.000	-0.764	-0.318	(39700.79)
155.000	-0.528	-0.289	(36013.99)
160.000	-0.296	-0.285	(35513.17)
165.000	-0.069	-0.312	(38945.89)
170.000	0.142	-0.325	(40569.58)
175.000	0.295	-0.216	(26994.53)
180.000	0.294	0.000	0.00
