Default Project
Hydrostatics & Stability Analysis
Default Company
Report Time: Tuesday, February 21, 2023, 5:18:41 PM
Model Name: C:\Users\hlebronriver2021\Desktop\Cat_multihull.3dm

Condition Summary

Load Condition Parameters

Condition	Weight / Sinkage	LCG / Trim	TCG / Heel	VCG (in)
Condition 1	80.000 lbf	0.000 deg	0.000 deg	0

Resulting Model Attitude and Hydrostatic Properties

Condition	Sinkage (in)	Trim(deg)	Heel(deg)	Ax(ft^2)
Condition 1	5.585	0.000	0.000	0.30

Condition	Displacement Weight (lbf)	LCB(in)	TCB(in)	VCB(in)	Wet Area (ft^2)
Condition 1	80.000	26.957	0.019	3.322	11.052

Condition	Awp(ft^2)	LCF(in)	TCF(in)	VCF(in)
Condition 1	3.700	27.066	0.019	5.585

Condition	BMt(in)	BMl(in)	GMt(in)	GMl(in)
Condition 1	48.888	58.448	52.210	61.770

Condition	Cb	Cp	Cwp	Cx	Cws	Cvp
Condition 1	0.188	0.820	0.260	0.230	4.360	0.725

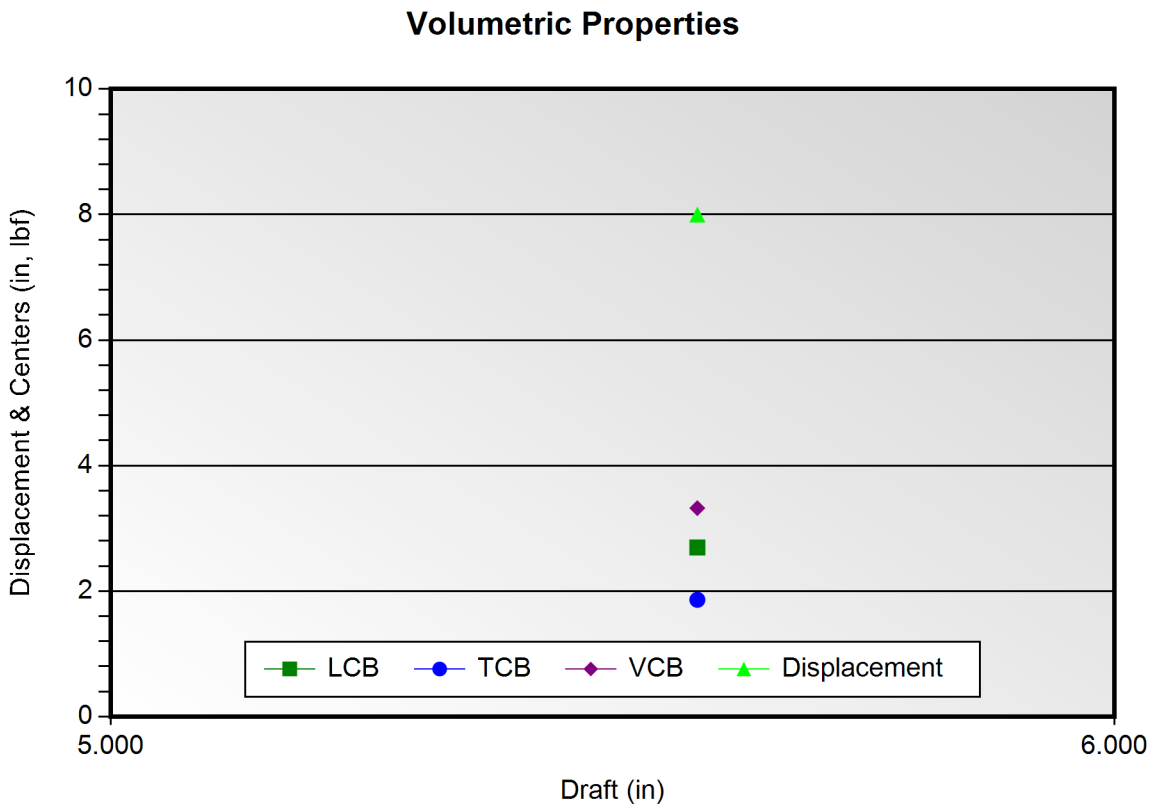
Notes

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

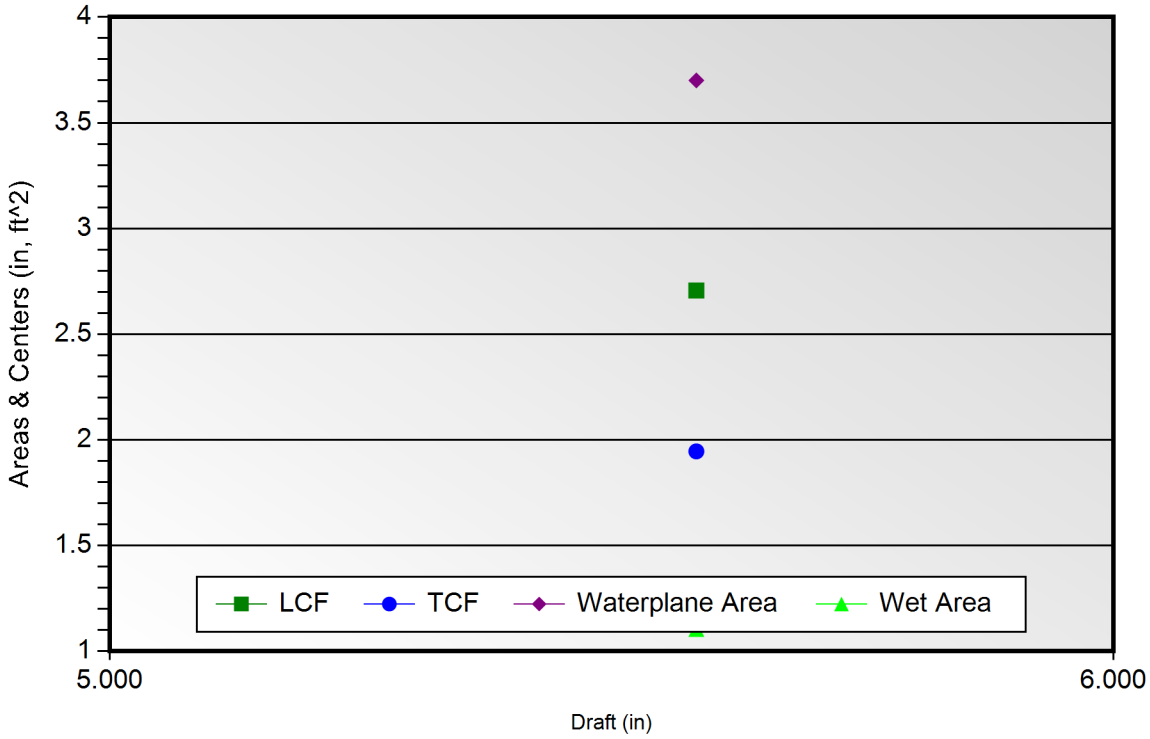
2. The orientation of the model for an Orca3D hydrostatics solution is defined in terms of “sinkage,” “trim,” and “heel.” The sinkage value represents the depth of the body origin (i.e. the Rhino world origin) below the resultant flotation plane, and is sometimes referred to as "origin depth." Heel and 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.

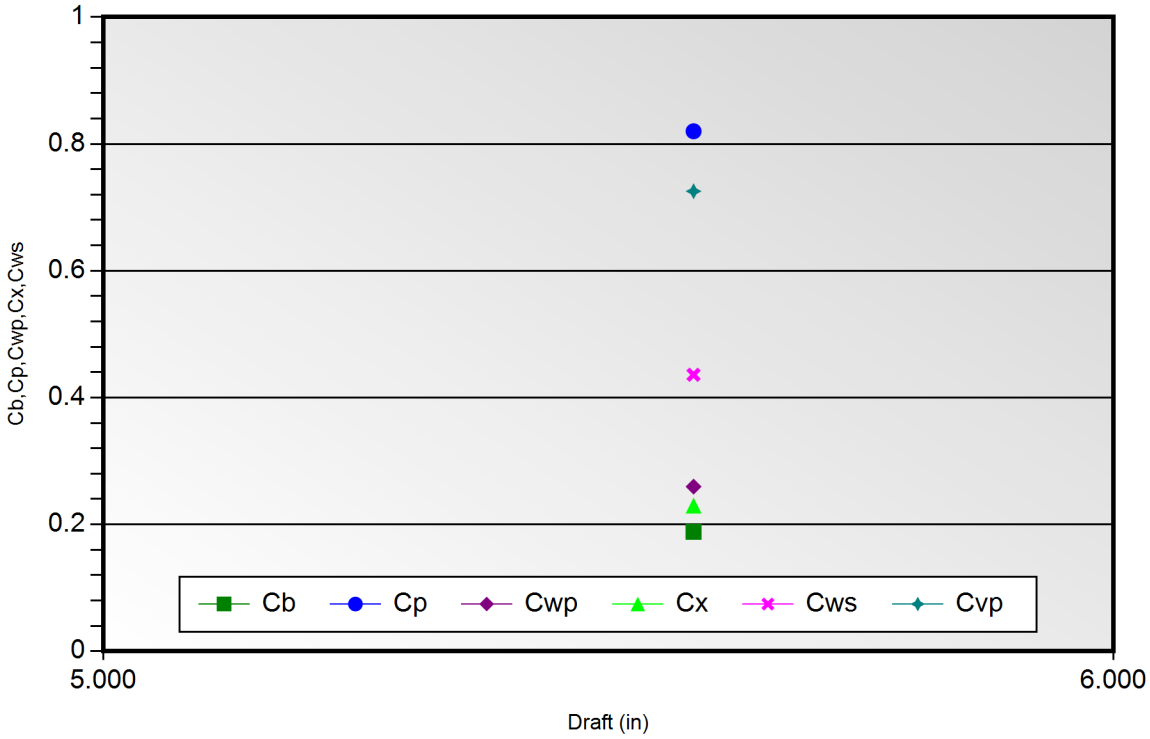
4. Calculation of Cp and Cx use Orca sections to determine Ax. If no Orca sections are defined, these values will be reported as zero.


Volumetric Properties
Displacement & Centers (in, lbf)
10
8
6
4
2
0
5.000
6.000
Draft (in)
LCB
TCB
VCB
Displacement

Area Properties



Hull Form Coefficients




Orca3D

Object Type	Name	ID
polysurface	Body2	{ca88ffdd-234a-41cb-9d33-b2d3cabdac7f}
polysurface	Body2	{1efc3b00-06e2-4170-9047-1c2721e1bece}

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Condition Name=Condition 1,Weight=80.00,Model Trim=0.00,Model Heel=0.00

General Info

Analysis Type	FreeFloatEquilibrium	Up Direction = Positive_Z	
		Fwd Direction = Positive_X	

Surface Meshing Parameters

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

Load Condition Parameters

Weight	80.000	lbf
Model Trim	0.000	deg
Model Heel	0.000	deg
VCG	0	in
Fluid Type	Seawater	
Fluid Density	1.991	slug/ft^3
Mirror Geometry	False	

Resultant Model Attitude

Heel Angle	0.000 deg	Sinkage	5.585 in
Trim Angle	0.000 deg		

Overall Dimensions

Length Overall, LOA	66.249 in	Loa / Boa	1.841
Beam Overall, Boa	35.989 in	Boa / D	4.658
Depth Overall, D	7.726 in		

Waterline Dimensions

Waterline Length, Lwl	61.736	in	Lwl / Bwl		1.857
Waterline Beam, Bwl	33.250	in	Bwl / T		5.954
Navigational Draft, T	5.584	in	D / T		1.383

Volumetric Values

Displacement Weight	80.000	lbf	Displ-Length Ratio			262.283
Volume	1.249	ft^3				
LCB	26.957	in	FB/Lwl	0.584	AB/Lwl	0.416
TCB	0.019	in	TCB / Bwl			0.001
VCB	3.322	in				
Wetted Surface Area	11.052	ft^2				
Moment To Trim	6.670	lbf-ft/in				

Waterplane Values

Waterplane Area, Awp	3.700	ft^2				
LCF	27.066	in	FF/Lwl	0.582	AF/Lwl	0.418
TCF	0.019	in	TCF / Lwl			0.000
Weight To Immerse	19.749	lbf/in				

Sectional Parameters

Ax	0.296	ft^2			
Ax Location	14.722	in	Ax Location / Lwl		0.782

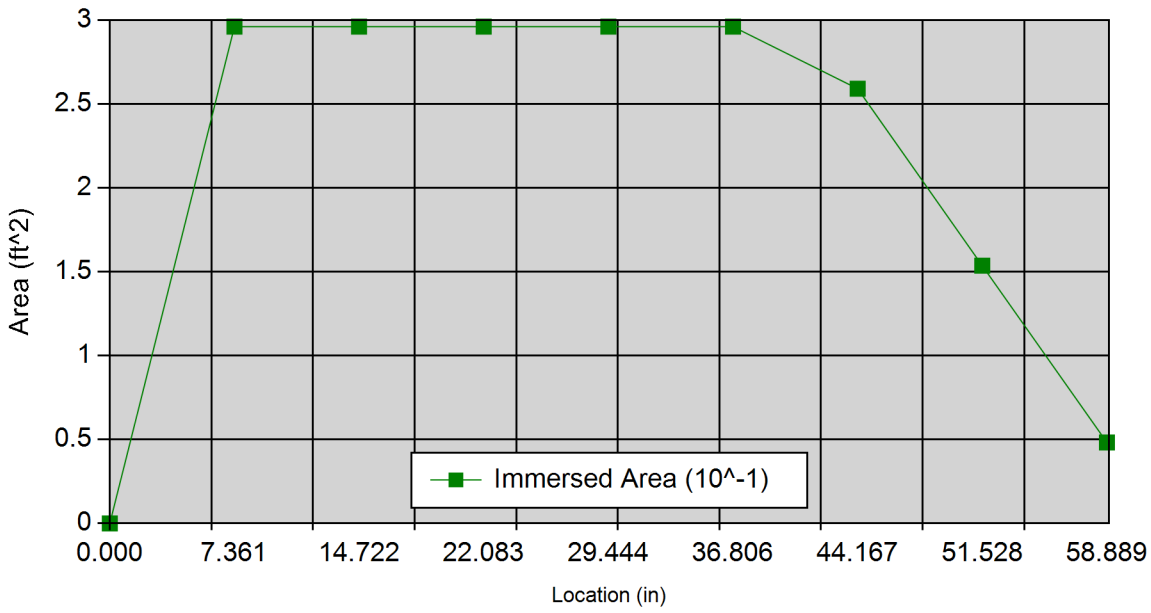
Hull Form Coefficients

Cb	0.188	Cx	0.230
Cp	0.820	Cwp	0.260
Cvp	0.725	Cws	4.360

Static Stability Parameters

I(transverse)	5.089	ft^4	I(longitudinal)	6.084	ft^4
BMt	48.888	in	BMl	58.448	in
GMt	52.210	in	GMl	61.770	in
Mt	46.625	in	Ml	56.185	in

Station Data



Location (in)	Immersed Area (ft^2)	Immersed Girth (in)
0.000	0.000	0.000
7.361	0.296	26.825
14.722	0.296	26.825
22.083	0.296	26.825
29.444	0.296	26.825
36.806	0.296	26.825
44.167	0.259	25.959
51.528	0.154	24.441
58.889	0.048	18.498