

Sail Yacht 9 m-22062020

Design Hydrostatics & Stability Analysis

NA Razmik Baharyan

Report Time: 02 юли 2020 г., 4:12:19

Model Name: C:\Users\Razmik\Documents\My Works,07092014\Freeship plus\Яхта Виталия-08042020\Sail Yacht 9m-22062020\Sail Yacht 9m-23062020.3dm



Condition Summary

Load Condition Parameters

Condition	Weight / Sinkage	LCG / Trim	TCG / Heel	VCG (m)
Condition 1	3,500 tonne-f	4,015 m	0,000 m	0,047

Resulting Model Attitude and Hydrostatic Properties

Condition	Sinkage (m)	Trim(deg)	Heel(deg)	Ax(m ²)
Condition 1	0,529	-0,789	0,000	0,75

Condition	Displacement Weight (tonne-f)	LCB(m)	TCB(m)	VCB(m)	Wet Area (m ²)
Condition 1	3,500	4,019	0,000	0,307	14,644

Condition	Awp(m ²)	LCF(m)	TCF(m)	VCF(m)
Condition 1	12,902	3,866	0,000	0,476

Condition	BMt(m)	BMI(m)	GMt(m)	GMI(m)
Condition 1	1,133	13,980	1,393	14,239

Condition	Cb	Cp	Cwp	Cx	Cws	Cvp
Condition 1	0,379	0,539	0,675	0,703	2,729	0,561

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.

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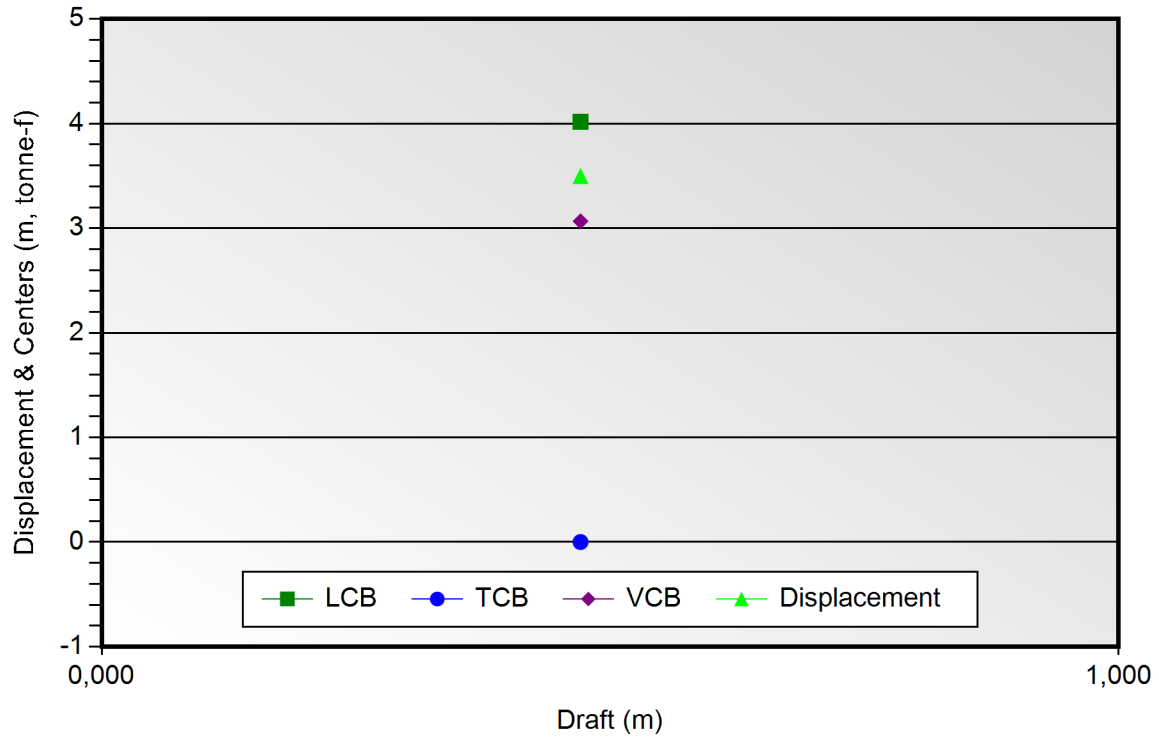
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Volumetric Properties



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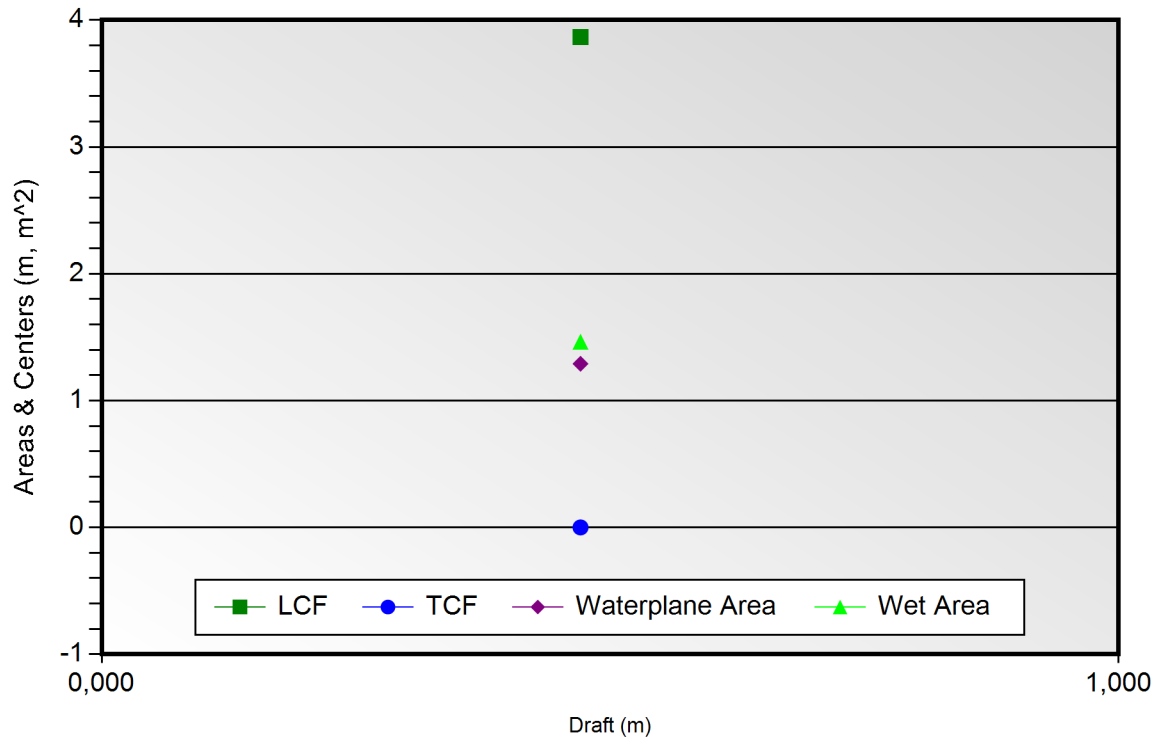
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Area Properties



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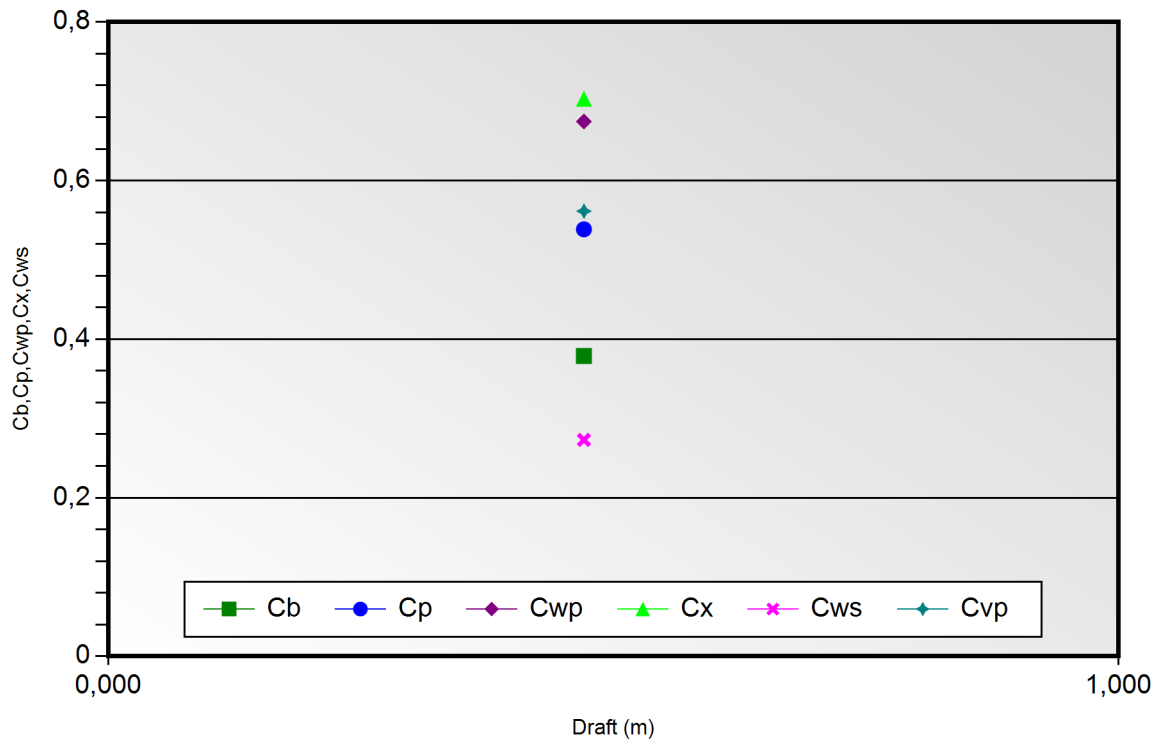
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Hull Form Coefficients



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Object Type	Name	ID
surface	Палуба	{b7c1296d-b7f5-4546-a204-a44735c2f2e2}
surface	Наружная обшивка	{5bb5e8da-f4e1-4475-b3a2-8ed1daf396ba}
polysurface	Палуба кокпита	{d2563551-4318-425c-ba33-0eb136fe3ca9}
surface	Продольная стенка кокпита	{6eec39ed-51f6-4408-934e-51cf4b978c45}
surface	Транец	{c76961cd-e044-4d06-97e3-b307c9ed3b6a}
surface	Транец	{c9b7f1be-df5d-4466-aac1-97785b3ee89a}
surface	Палуба рубки	{ff750cdc-3765-4fc4-a560-24f7d07e26c1}
surface	Кормовая стенка кокпита	{0a0624e3-1b1a-456f-b80a-4f93c16f614e}
surface	Пол предбанника	{f062ad50-14f3-4cd7-b992-c011f4d753fe}
surface	Продольная стенка предбанника	{bbcda8f4-716f-4ec9-8622-175dbd43c06c}
polysurface	Поперечная стенка предбанника	{7419dceb-01f8-42b8-8bc4-dc7aebc3e756}
surface	Кормовая стенка рубки	{aa5d8521-a6ce-4c29-8e91-a3d2a15f5f94}
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Condition Name=Condition 1, Weight=3,50, LCG=4,02, TCG=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 m
Maximum angle	0	Maximum edge length	0 m
Maximum aspect ratio	0	Max distance, edge to surf.	0 m
Minimum initial grid quads	0	Jagged seams	False
Refine mesh	True	Simple planes	True

Load Condition Parameters

Weight	3,500 tonne-f
LCG	4,015 m
TCG	0,000 m
VCG	0,047 m
Fluid Type	Seawater
Fluid Density	1,026 t/m ³
Mirror Geometry	True

Resultant Model Attitude

Heel Angle	0,000 deg	Sinkage	0,529 m
Trim Angle	-0,789 deg		

Overall Dimensions

Length Overall, LOA	9,004 m	Loa / Boa	2,814
Beam Overall, Boa	3,200 m	Boa / D	1,700
Depth Overall, D	1,883 m		

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**Waterline Dimensions**

Waterline Length, Lwl	8,440 m	Lwl / Bwl	3,725
Waterline Beam, Bwl	2,266 m	Bwl / T	4,812
Navigational Draft, T	0,471 m	D / T	3,998

Volumetric Values

Displacement Weight	3,500 tonne-f	Displ-Length Ratio	162,233
Volume	3,412 m ³		
LCB	4,019 m	FB/Lwl	0,565
TCB	0,000 m	TCB / Bwl	0,000
VCB	0,307 m		
Wetted Surface Area	14,644 m ²		
Moment To Trim	0,059 tonne- m/cm		

Waterplane Values

Waterplane Area, Awp	12,902 m ²		
LCF	3,866 m	FF/Lwl	0,583
TCF	0,000 m	TCF / Lwl	0,000
Weight To Immerse	0,132 tonne-f/cm		

Sectional Parameters

Ax	0,751 m ²		
Ax Location	3,716 m	Ax Location / Lwl	0,601

Hull Form Coefficients

Cb	0,379	Cx	0,703
Cp	0,539	Cwp	0,675
Cvp	0,561	Cws	2,729

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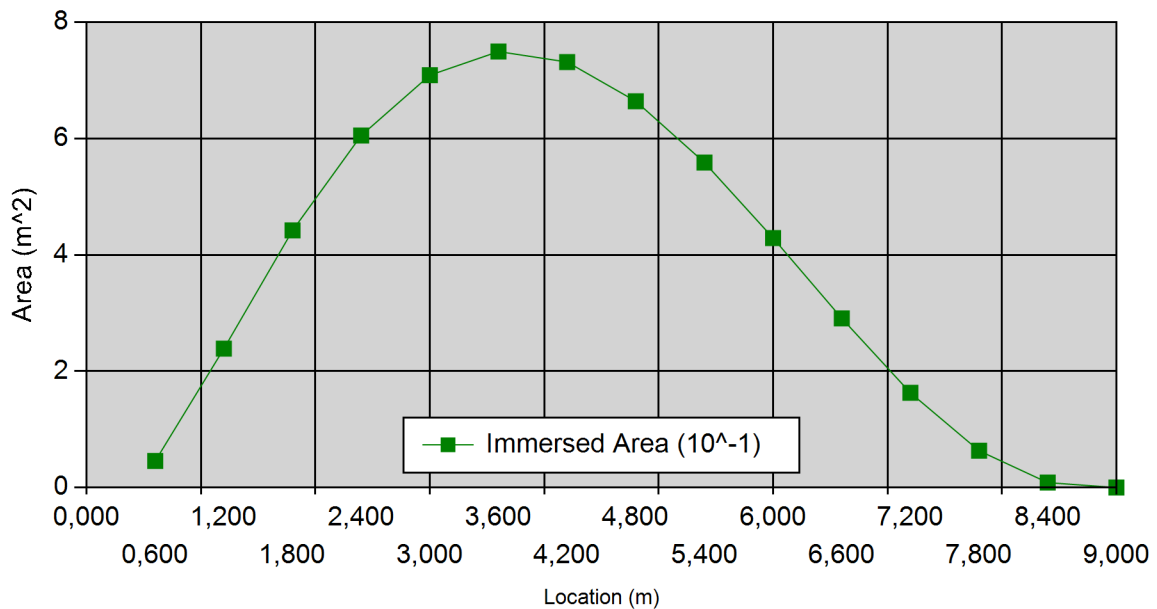
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Static Stability Parameters

I(transverse)	3,866 m ⁴	I(longitudinal)	47,694 m ⁴
BMt	1,133 m	BMI	13,980 m
GMt	1,393 m	GMI	14,239 m
Mt	0,966 m	MI	13,813 m

Station Data



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Location (m)	Immersed Area (m ²)	Immersed Girth (m)
0,600	0,046	1,050
1,200	0,239	1,769
1,800	0,442	2,164
2,400	0,605	2,395
3,000	0,709	2,505
3,600	0,750	2,515
4,200	0,732	2,440
4,800	0,664	2,289
5,400	0,559	2,069
6,000	0,429	1,787
6,600	0,291	1,449
7,200	0,163	1,066
7,800	0,063	0,652
8,400	0,009	0,235
9,000	0,000	0,000