

NUBIAN 24

Hydrostatics & Stability Analysis

STUDIO11SM

Report Time: 2011-09-25 21:04:48

Model Name: C:\Users\Slawek\Desktop\PRACE JACHTY\SERIA NUBIAN\Nubian 24\nubian24_analiza
orca.3dm



Condition Summary

Load Condition Parameters

Condition	Weight / Sinkage	LCG / Trim	TCG / Heel	VCG (m)
Condition 1	1850,000 kgf	0,000 deg	0,000 deg	0

Resulting Model Attitude and Hydrostatic Properties

Condition	Sinkage (m)	Heel(deg)	Trim(deg)	Ax(m ²)
Condition 1	0,169	0,000	0,000	0,43

Condition	Displacement(kgf)	LCB(m)	TCB(m)	VCB(m)	Wet Area (m ²)
Condition 1	1850,000	4,292	0,000	0,073	12,568

Condition	Awp(m ²)	LCF(m)	TCF(m)	VCF(m)
Condition 1	11,581	4,502	0,000	0,169

Condition	BMT(m)	BMI(m)	GMT(m)	GMI(m)
Condition 1	2,079	17,264	2,15	17,34

Condition	Cb	Cp	Cwp	Cx	Cws	Cvp
Condition 1	0,389	0,617	0,725	0,632	3,476	0,537

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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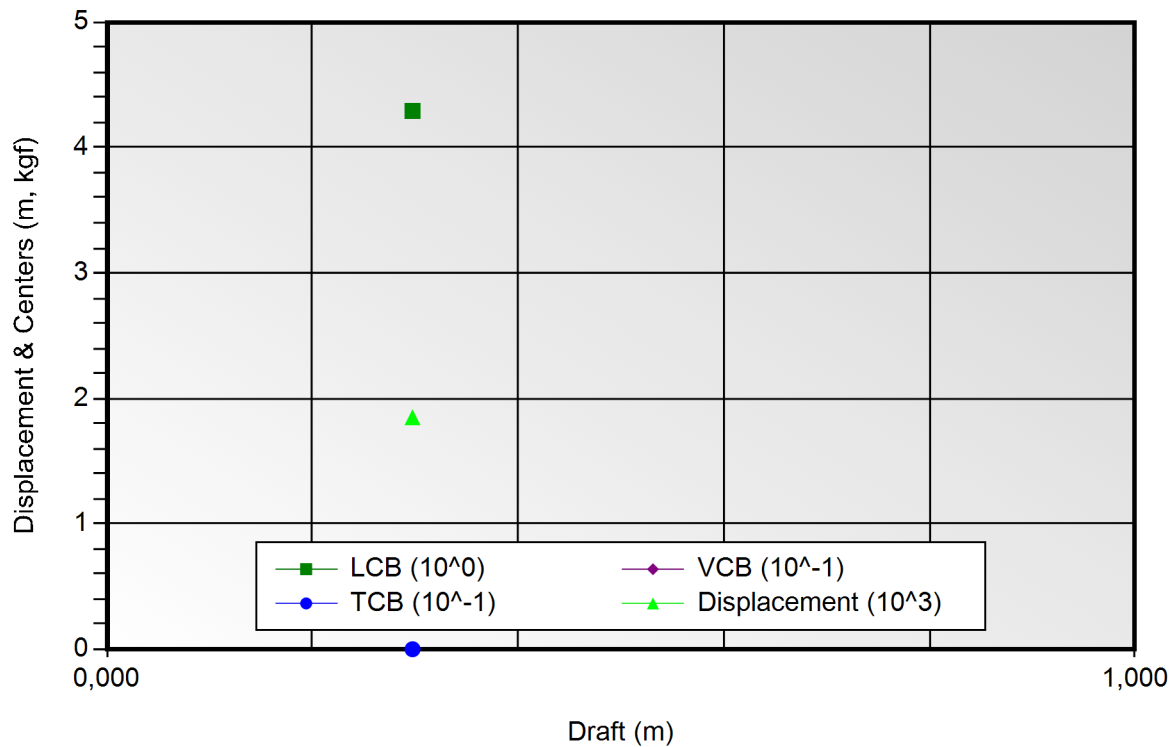
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Volumetric Properties



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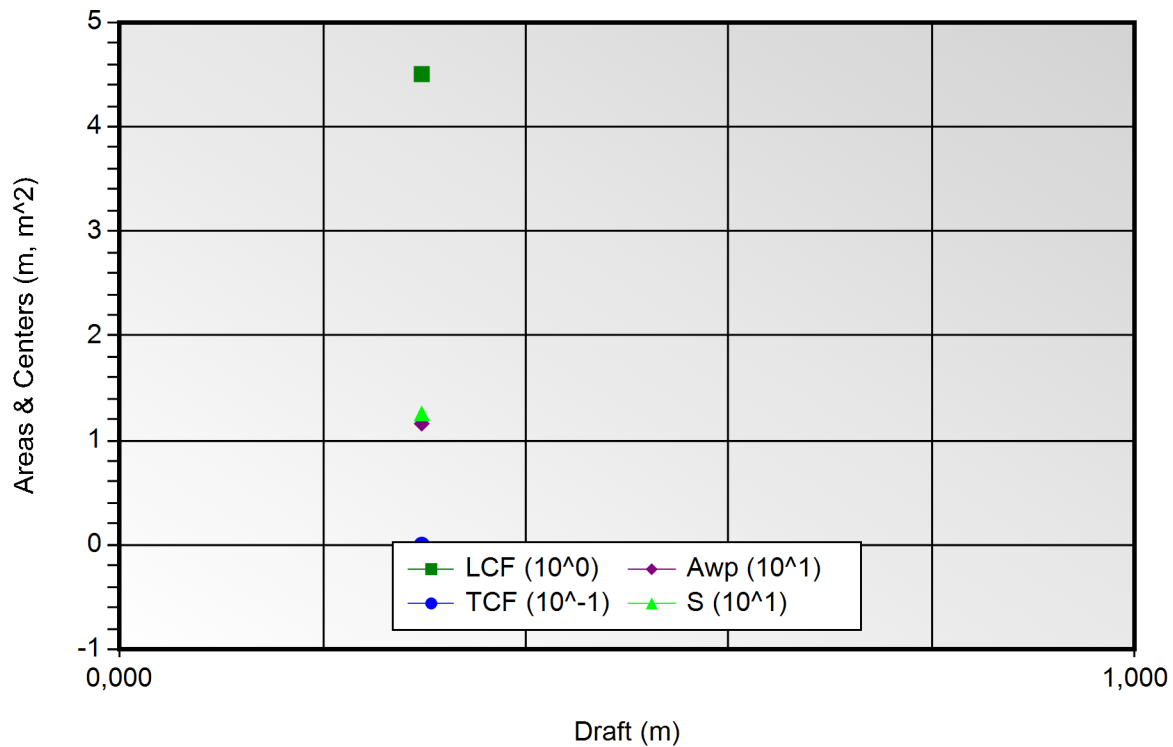
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Area Properties



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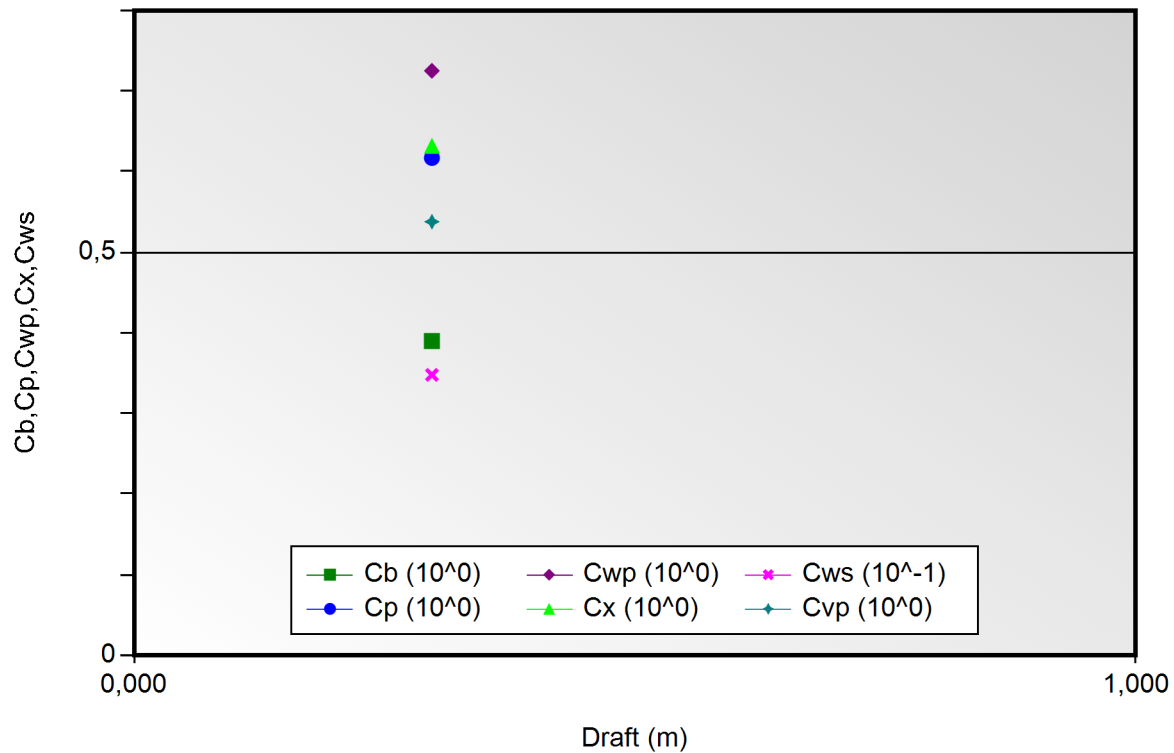
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Hull Form Coefficients



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Object Type	Name	ID
polipowierzc hnia	Unnamed Rhino Object	{098e3d98-a34d-40b6-8079-ea8523cf61e1}

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Condition Name=Condition 1,Weight=1 850,00,Model Trim=0,00,Model Heel=0,00

Analysis Type	FreeFloatEquilibrium
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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	1850,000 kgf
Model Trim	0,000 deg
Model Heel	0,000 deg
VCG	0 m
Fluid Type	Freshwater
Fluid Density	999,000 kg/m ³
Mirror Geometry	False

Resultant Model Attitude

Heel Angle	0,000 deg	Sinkage	0,169 m
Trim Angle	0,000 deg		

Overall Dimensions

Length Overall, LOA	7,296 m	Loa / Boa	2,593
Beam Overall, Boa	2,813 m	Boa / D	1,659
Depth Overall, D	1,696 m		

Waterline Dimensions

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Waterline Length, Lwl	7,059 m	Lwl / Bwl	3,118
Waterline Beam, Bwl	2,264 m	Bwl / T	7,611
Navigational Draft, T	0,297 m	D / T	5,700

Volumetric Values

Displacement	1850,000 kgf	Displ-Length Ratio	146,556
Volume	1,852 m ³		
LCB	4,292 m	FB/Lwl 0,423	AB/Lwl 0,577
TCB	0,000 m	TCB / Bwl	0,000
VCB	0,073 m		
Wetted Surface Area	12,568 m ²		
Moment To Trim	45,432 kgf-m/cm		

Waterplane Values

Waterplane Area, Awp	11,581 m ²		
LCF	4,502 m	FF/Lwl 0,394	AF/Lwl 0,606
TCF	0,000 m	TCF / Lwl	0,000
Weight To Immerse	115,696 kgf/cm		

Sectional Parameters

Ax	0,425 m ²		
Ax Location	4,536 m	Ax Location / Lwl	0,389

Hull Form Coefficients

Cb	0,389	Cx	0,632
Cp	0,617	Cwp	0,725
Cvp	0,537	Cws	3,476

Static Stability Parameters

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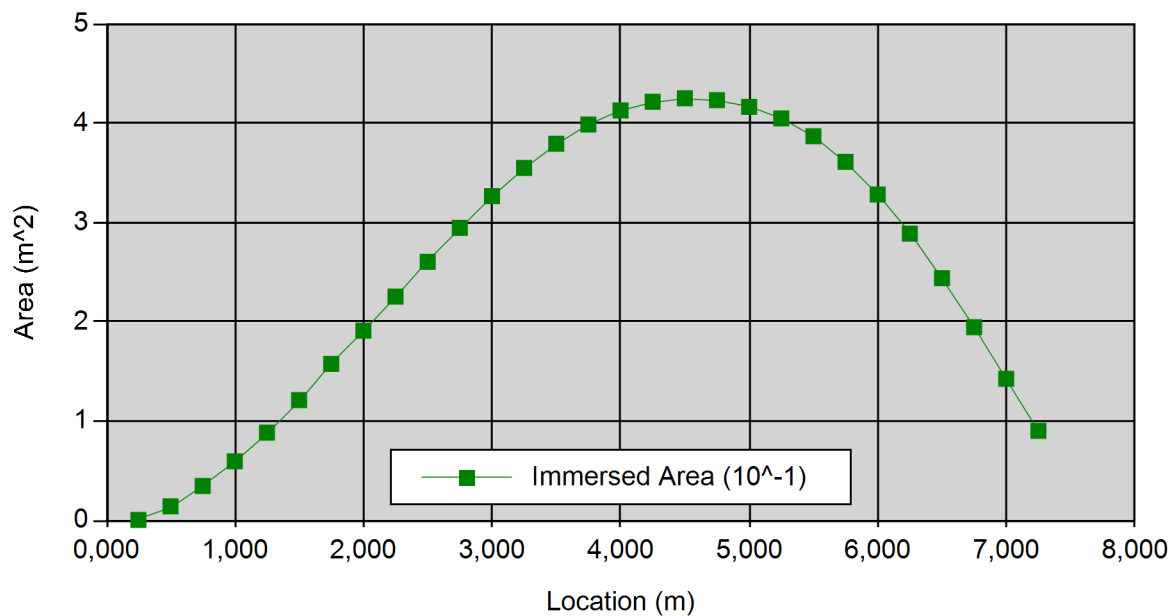
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I(transverse)	3,851 m ⁴	I(longitudinal)	31,970 m ⁴
BMt	2,079 m	BMI	17,264 m
GMt	2,15 m	GMI	17,34 m
Mt	1,984 m	MI	17,168 m

Station Data

Location (m)	Immersed Area (m ²)	Immersed Girth (m)
0,248	0,000	0,112
0,498	0,014	0,393
0,748	0,035	0,519
0,998	0,059	0,647
1,248	0,088	0,795
1,498	0,121	0,959
1,748	0,158	1,136
1,998	0,191	1,309
2,248	0,225	1,482

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Location (m)	Immersed Area (m ²)	Immersed Girth (m)
2,498	0,261	1,646
2,748	0,295	1,790
2,998	0,327	1,917
3,248	0,355	2,027
3,498	0,379	2,119
3,748	0,399	2,195
3,998	0,413	2,256
4,248	0,422	2,303
4,498	0,425	2,337
4,748	0,424	2,359
4,998	0,417	2,370
5,248	0,405	2,371
5,498	0,387	2,360
5,748	0,361	2,337
5,998	0,328	2,304
6,248	0,289	2,261
6,498	0,244	2,208
6,748	0,195	2,124
6,998	0,143	1,992
7,248	0,090	1,808

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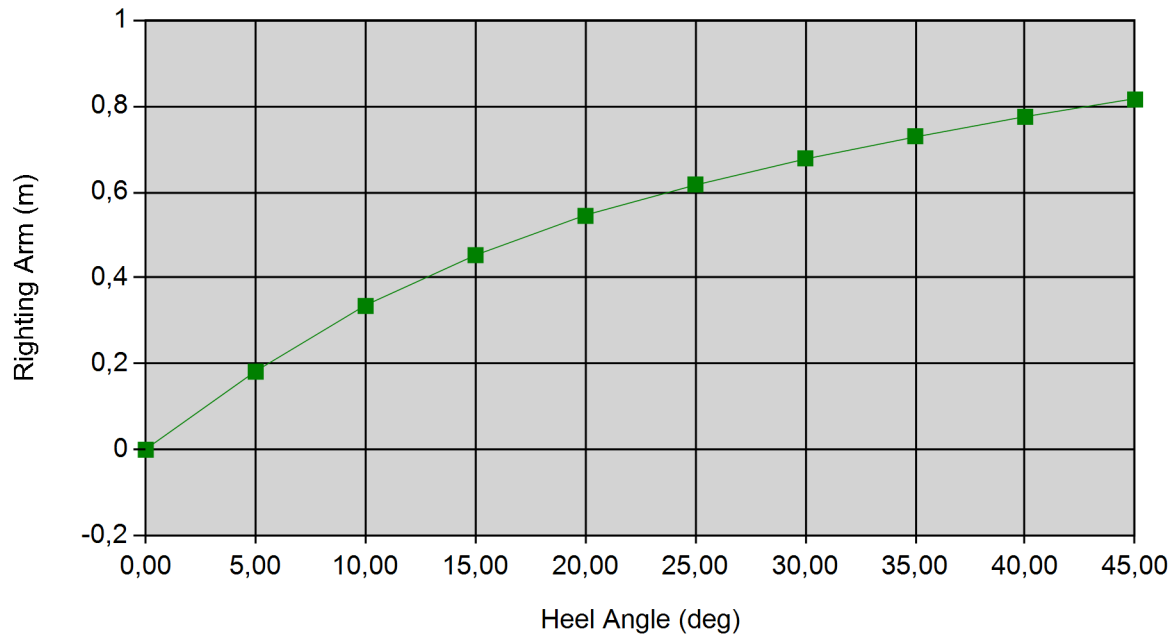
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Stability Curve



Heel(deg)	Trim(deg)	Righting Arm (m)	Righting Moment (kgf-m)
0,000	0,000	0,000	0,0
5,000	-0,042	0,182	336,2
10,000	-0,186	0,335	619,5
15,000	-0,433	0,453	838,8
20,000	-0,757	0,545	1007,5
25,000	-1,134	0,618	1142,8
30,000	-1,557	0,679	1255,3
35,000	-2,019	0,730	1351,0
40,000	-2,520	0,775	1434,0
45,000	-3,048	0,815	1508,6

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No Points of Interest to Report

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Model Name: C:\Users\Slawek\Desktop\PRACE JACHTY\SERIA NUBIAN\Nubian 24\nubian24_analiza
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Condition Name=Plane Condition,Weight=1 850,00,LCG=4,29,Model Heel=0,00

Analysis Type	Rollover
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Surface Meshing Parameters	
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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	
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Weight	1850,000 kgf
LCG	4,292 m
Model Heel	0,000 deg
VCG	0 m
Fluid Type	Freshwater
Fluid Density	999,000 kg/m ³
Mirror Geometry	False

Resultant Model Attitude	
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Heel Angle	0,000 deg	Sinkage	0,169 m
Trim Angle	0,000 deg		

Overall Dimensions	
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Length Overall, LOA	7,296 m	Loa / Boa	2,593
Beam Overall, Boa	2,813 m	Boa / D	1,659
Depth Overall, D	1,696 m		

Waterline Dimensions	
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Volumetric Values

Displacement	1850,000 kgf	Displ-Length Ratio	146,556
Volume	1,852 m ³		
LCB	4,292 m	FB/Lwl 0,423	AB/Lwl 0,577
TCB	0,000 m	TCB / Bwl	0,000
VCB	0,073 m		
Wetted Surface Area	12,568 m ²		
Moment To Trim	45,241 kgf-m/cm		

Waterplane Values

Waterplane Area, Awp	11,581 m ²		
LCF	4,502 m	FF/Lwl 0,394	AF/Lwl 0,606
TCF	0,000 m	TCF / Lwl	0,000
Weight To Immerse	115,696 kgf/cm		

Sectional Parameters

Ax	0,425 m ²		
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Cvp	0,537	Cws	3,476

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GMt	None available m	GMI	None available m
Mt	1,984 m	MI	17,168 m