

SEATOR1980

Planing Hull Resistance

ROMV ShipDesign & Consulting®

Report Time: lunes, 16 de enero de 2017, 23:20:58

Model Name: C:\Users\HP\Documents\My Consulting Services\FROMERO\GoldCoastCat ferry
 \ROMV928. SEATOR1980 Cat Ferry V2 160915.3dm



Prediction Parameter	Value	Vessel Data	Value
Method	Savitsky	MaxPlaningLength	19800 mm
SpeedCheck	Check	MaxPlaningBeam	1817,7 mm
HullCheck	Check	DisplacementBare	12653 kgf
DesignMarginPercent	20	LCGFwdTransom	9410,5 mm
DesignSpeed	25 kt	VCGAboveBL	2027,6 mm
WaterType	Salt	ShaftAngle	6,124 deg
WaterDensity	1025,9 kg/m3	LCEFwdTransom	389,51 mm
WaterViscosity	1,1883E-06 m2/s	VCEAboveBL	95,528 mm
Propulsive Efficiency	60 %		

Parameter Check	Value	Minimum	Maximum	Type
LcgBchRatio	5,1772	0,6	3	Computed
FnBchMax	3,0462	1,43	13	Computed
DeadriseMidLen	20,498 deg	0	30	Computed
CLBmax	0,43533	0	0,5	Computed

Speed (kt)	Fnv	Trim (deg)	Rbare (N)	Rtotal (N)	PEtotal (kW)	PPtotal (kW)
10,000	1,081	0,371	25904,5	31085,4	159,9	266,5
12,000	1,297	0,392	24742,1	29690,6	183,3	305,5
14,000	1,513	0,415	22785,9	27343,1	196,9	328,2
16,000	1,729	0,440	20833,7	25000,5	205,8	343,0
18,000	1,945	0,464	19240,9	23089,0	213,8	356,3
20,000	2,162	0,488	18133,0	21759,6	223,9	373,1
22,000	2,378	0,512	17521,6	21025,9	238,0	396,6
24,000	2,594	0,536	17362,7	20835,3	257,2	428,7
26,000	2,810	0,560	17591,8	21110,1	282,4	470,6
28,000	3,026	0,583	18139,8	21767,7	313,6	522,6
30,000	3,242	0,607	18942,6	22731,2	350,8	584,7

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Speed (kt)	FnBch	Eff Planing Beam (mm)	Eff Deadrise (deg)	Rbare/W	Porpoising	Prediction Check
10,000	1,225	1799,734	20,497	0,209	Check	Check=1,2,3,4
12,000	1,469	1799,728	20,497	0,199	Check	Check=1,2,3,4
14,000	1,714	1799,717	20,497	0,184	Check	Check=1,2,3,4
16,000	1,959	1799,706	20,497	0,168	Check	Check=1,2,3,4
18,000	2,204	1799,697	20,497	0,155	Check	Check=1,3,4
20,000	2,449	1799,691	20,497	0,146	Check	Check=1,3,4
22,000	2,694	1799,687	20,498	0,141	Check	Check=1,3,4
24,000	2,939	1799,686	20,498	0,140	Check	Check=1,4
26,000	3,184	1799,687	20,498	0,142	Check	Check=1,4
28,000	3,429	1799,689	20,497	0,146	Check	Check=1,4
30,000	3,674	1799,693	20,497	0,153	Check	Check=1,4

Sensitivity Analysis	Index	To Reduce Drag
Eff planing beam	0,71644	Decrease
Eff deadrise	0,56886	Decrease
LCG fwd transom	0,23469	Decrease
Shaft angle to BL	0,030611	Increase

Prediction Checks

1. A wetted keel length greater than the boat length indicates that the boat is running at small trim and the bow will be immersed. In this condition, the prismatic analysis of the Savitsky prediction will be unreliable and can significantly under-predict the actual drag. However, as this condition typically occurs at pre-planing speeds, the internal hump speed correction accounts for this in the prediction of drag. There is no correction for trim.

2. The Froude number based on chine beam (FnBch) is a good indicator of the development of the spray root and the magnitude of the planing lift coefficient. Results for speeds outside of the Savitsky data set (most often for low speeds below the range) may be unreliable.

3. The lift coefficient (CLb) is a ratio of displacement to the square of speed and chine beam, with a correction for deadrise. This coefficient is a measure of the weight loading for the given planing geometry. We caution against using this method for hulls that produce this data range error.

4. The original testing of the models used in the Savitsky analysis were limited to a given range of trim values. Predicted trim values that are beyond the range of the original data set may be unreliable.

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Notes

A Sensitivity index with a higher value has a greater influence on drag. Sensitivity values greater than 1.0 are considered significant.

PPtotal represents the total propulsive power. Its precise definition depends on how the user specified the propulsive efficiency. If the user input the quasi-propulsive efficiency, then PPtotal is the total delivered power. If the user specified overall propulsive efficiency then PPtotal is the brake power.

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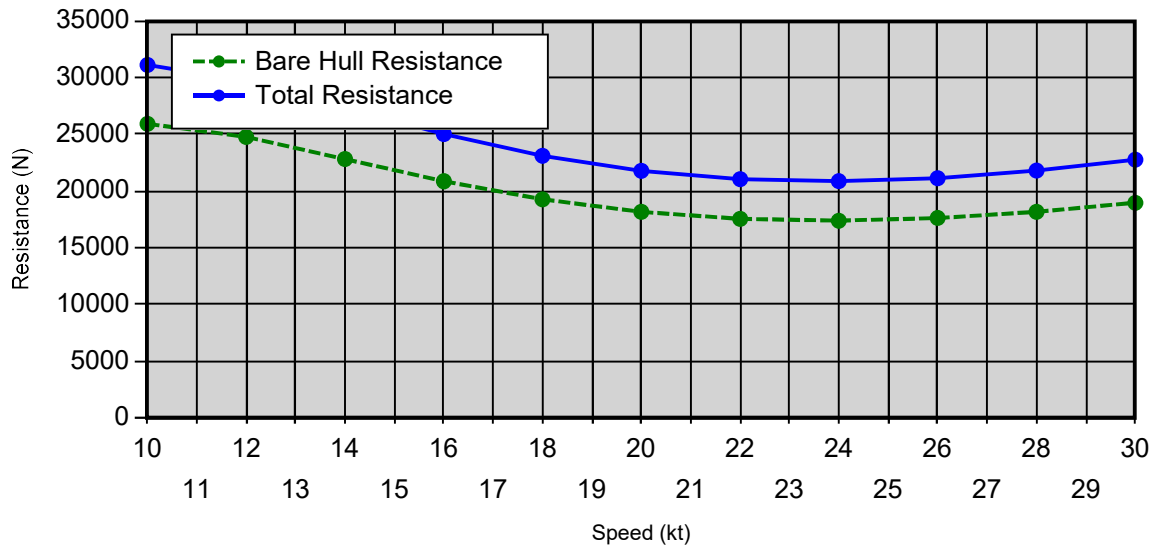
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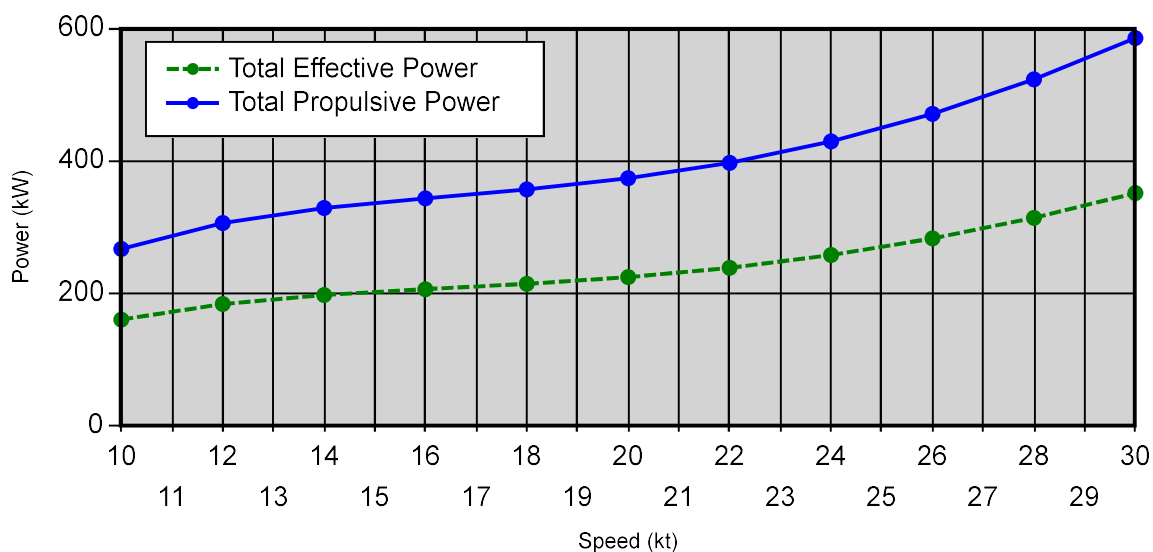
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Orca3D Planing Analysis (Resistance)



Orca3D Planing Analysis (Power)



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Orca3D Planing Analysis (Trim Angle)

