

An Intelligent Interactive Design System for Greener and Customer-Centred Ship Design

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APPENDIX 3

Table 1: Hydrostatics and resistance results of the first ten design alternatives shown in Figure 7.

Hull	1	2	3	4	5	6	7	8	9	10
D	2.54	2.95	4.00	3.99	3.61	3.68	3.57	3.18	4.02	2.50
T	1.00	1.00	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
F_n	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
BWL	6.83	6.35	4.11	5.25	4.37	4.87	5.79	6.70	4.28	6.47
LWL	14.78	16.96	13.04	16.96	10.08	17.33	21.04	14.59	17.58	14.79
A_{wp}	70.31	75.92	36.96	60.14	31.95	58.90	78.29	77.61	48.61	62.72
A_x	5.18	4.15	3.43	3.93	3.81	4.22	5.42	7.15	3.80	4.22
A_{ws}	77.38	80.31	46.64	67.67	37.28	69.03	92.56	88.64	63.60	69.98
V	42.31	38.90	26.46	33.60	20.26	37.06	63.10	72.09	37.75	36.75
IT	200.35	194.14	36.03	92.48	37.10	84.76	147.99	233.29	52.26	145.05
LCB	8.41	10.09	6.36	9.45	6.25	9.05	11.70	7.97	10.10	8.55
KB	0.34	0.32	0.48	0.40	0.44	0.44	0.50	0.54	0.51	0.32
LCF	8.30	9.44	6.66	8.52	5.82	10.03	11.72	7.87	9.98	8.44
BM	4.74	4.99	1.36	2.75	1.82	2.29	2.35	3.24	1.38	3.95
KM	5.07	5.30	1.84	3.15	2.67	2.72	2.85	3.77	1.90	4.27
C_p	0.55	0.55	0.59	0.50	0.53	0.51	0.55	0.69	0.56	0.59
C_b	0.42	0.36	0.33	0.25	0.31	0.29	0.35	0.49	0.33	0.40
C_{wp}	0.70	0.70	0.69	0.68	0.73	0.70	0.64	0.79	0.65	0.66
C_m	0.76	0.65	0.56	0.50	0.58	0.58	0.62	0.71	0.59	0.69
R_{res}	353.10	251.74	83.01	145.27	166.24	114.05	225.99	417.82	121.06	282.74
R_F	575.80	663.84	315.53	559.36	207.67	580.12	903.01	653.12	310.98	521.01
R_T	928.90	915.58	398.54	704.63	373.91	694.17	1129	1070.94	432.04	803.75

where D : Depth (m), T : Draft (m), BWL : Width at waterline (m), LWL : Length at waterline (m), A_w : Waterplane area (m^2), A_x : Maximum sectional area (m^2), A_{ws} : Wetted surface area (m^2), V : Volume (m^3), IT : Transverse moment of inertia (m^4), LCB : Longitudinal center of buoyancy (m), KB : Vertical center of buoyancy (m), LCF : Longitudinal center of flotation (m), BM : Metacentric radius (m), KM : Metacenter height (m), C_p : Prismatic coefficient, C_b : Block coefficient, C_{wp} : Waterplane coefficient, C_m : Midship coefficient, R_{res} : Residuary Resistance (N), R_F : Frictional Resistance (N) and R_T : Total Resistance (N).