

KAPER resistance for canoes and kayaks, according to John Winters.

Project :
Designer :
Filename : C:\Documents and Settings\Jeremy\My Documents\Project Files\Electric
Boat\Freeship\FreeShip\Winsome.fbm

Design length : 5.225 [m]
Design beam : 1.040 [m]
Design draft : 0.140 [m]
Midship location : 2.612 [m]
Water density : 1.025 [t/m3]
Appendage coefficient : 1.0000

Date : 09/07/2009
Time : 14:16:24

Input variables

Hull

Effective waterline length : 5.161 [m]
Beam on waterline : 0.898 [m]
Draft hull : 0.459 [m]
Wetted surface area : 3.55 [m2]
Prismatic coefficient : 0.5276
Displacement : 0.2730 [tonnes]
Half entrance-angle of dwl : 8.365 [degr.]
Longitudinal center of buoyancy : 0.497
Submerged transom area ratio : 0.0000

Final calculations of resistance:

Speed [kn]	Speed [m/s]	S/L ratio	R frict. [N]	R resid. [N]	R total [N]	Spilman [N]
1.50	0.77	0.365	3.977	0.069	4.046	4.593
1.60	0.82	0.389	4.470	0.082	4.551	4.920
1.70	0.87	0.413	4.988	0.096	5.084	5.330
1.80	0.93	0.437	5.532	0.112	5.644	5.813
1.90	0.98	0.462	6.101	0.128	6.230	6.360
2.00	1.03	0.486	6.696	0.146	6.842	6.964
2.10	1.08	0.510	7.315	0.163	7.479	7.619
2.20	1.13	0.535	7.960	0.181	8.141	8.317
2.30	1.18	0.559	8.629	0.199	8.828	9.054
2.40	1.23	0.583	9.322	0.217	9.539	9.825
2.50	1.29	0.608	10.039	0.235	10.274	10.626
2.60	1.34	0.632	10.781	0.252	11.033	11.455
2.70	1.39	0.656	11.547	0.270	11.817	12.310
2.80	1.44	0.680	12.336	0.288	12.624	13.189
2.90	1.49	0.705	13.150	0.305	13.455	14.092
3.00	1.54	0.729	13.986	0.315	14.301	15.019
3.10	1.59	0.753	14.847	0.326	15.173	15.971
3.20	1.65	0.778	15.730	0.340	16.070	16.951
3.30	1.70	0.802	16.637	0.357	16.994	17.961
3.40	1.75	0.826	17.567	0.391	17.958	19.005
3.50	1.80	0.851	18.520	0.433	18.953	20.087
3.60	1.85	0.875	19.495	0.485	19.981	21.212
3.70	1.90	0.899	20.494	0.550	21.045	22.387
3.80	1.95	0.923	21.515	0.637	22.153	23.618
3.90	2.01	0.948	22.559	0.745	23.304	24.913
4.00	2.06	0.972	23.626	0.876	24.502	26.281
4.10	2.11	0.996	24.715	1.036	25.750	27.729
4.20	2.16	1.021	25.826	1.239	27.065	29.270

4.30	2.21	1.045	26.959	1.486	28.446	30.912
4.40	2.26	1.069	28.115	1.781	29.897	32.669
4.50	2.31	1.094	29.293	2.131	31.424	34.553
4.60	2.37	1.118	30.493	2.598	33.091	36.576
4.70	2.42	1.142	31.715	3.177	34.892	38.753
4.80	2.47	1.166	32.958	3.864	36.822	41.099
4.90	2.52	1.191	34.224	4.671	38.896	43.629
5.00	2.57	1.215	35.511	5.494	41.005	46.360
5.10	2.62	1.239	36.821	6.344	43.165	49.310
5.20	2.68	1.264	38.151	7.290	45.441	52.495
5.30	2.73	1.288	39.504	8.336	47.839	55.936
5.40	2.78	1.312	40.878	9.509	50.386	59.651
5.50	2.83	1.337	42.273	10.820	53.093	63.662
5.60	2.88	1.361	43.690	12.253	55.943	67.990
5.70	2.93	1.385	45.128	13.809	58.937	72.656

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