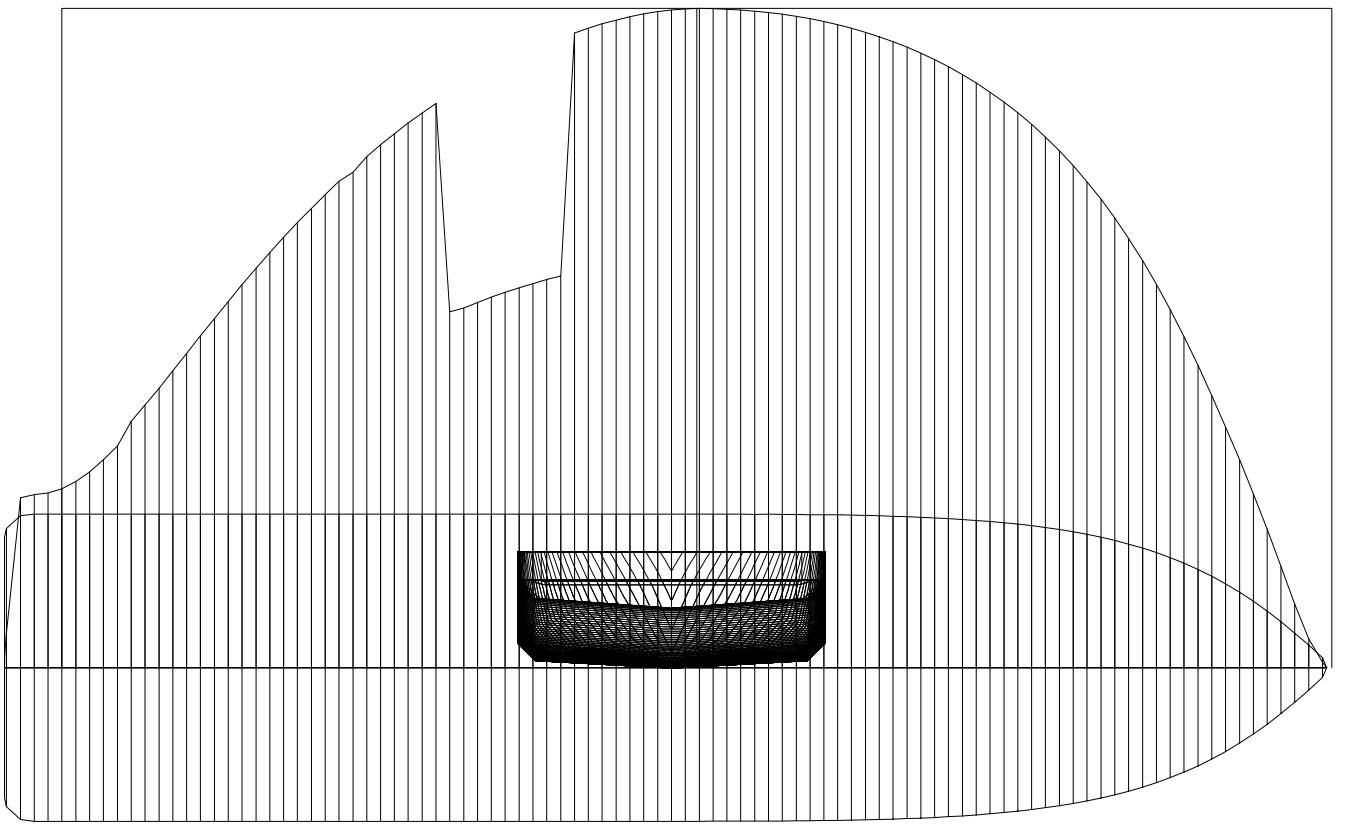


**Ship: EXAMPLE**

**Hydrostatic Data**

ANG:	.000	°
TA :	3.800	M
TF :	3.800	M
LWL:	57.500	M
BWL:	13.300	M
XA :	-2.500	M
XF :	55.000	M
VOL:	1856.504	M3
XB :	27.036	M
YB :	.000	M
ZB :	2.241	M
WPA:	670.497	M
XWP:	23.972	M
YWP:	.000	M
WS :	890.197	M2
XWS:	25.091	M
ZWS:	1.382	M
LA :	181.718	M2
XLA:	29.450	M
CP :	.705	
CB :	.668	
CM :	.947	
CWP:	.917	
GZ :	.000	M
KN :	.000	M
KML:	90.194	M
KMT:	7.297	M



**Ship: RoRo (test)**  
**HYDROSTATIC TABLE**

Main Dimensions

Length Over All.....	: 143.362 M.
L. Between Perpendiculars:	131.500 M.
Moulded Beam.....	23.400 M.
Moulded Depth.....	13.600 M.
Design Draught.....	5.800 M.

EXAMPLE

**Ship: RoRo (test)**  
**HYDROSTATIC TABLE**

Trim: .000 M

T (M)	VOL (M3)	DIS (TM)	XB (M)	ZB (M)	WPA (M2)	XWP (M)	WS (M2)	KML (M)	KMT (M)	TPC	MCT	CB	CM	CWP	CP
4.300	8019.0	8227.5	63.494	2.380	2334.55	60.757	2963.22	275.47	13.568	23.95	169.8	.606	.950	.759	.638
4.400	8253.2	8467.8	63.414	2.436	2350.00	60.577	3000.29	271.99	13.422	24.11	172.5	.610	.951	.764	.641
4.500	8489.1	8709.8	63.331	2.492	2366.40	60.385	3038.08	269.09	13.288	24.28	175.3	.613	.952	.769	.644
4.600	8726.6	8953.5	63.248	2.548	2383.23	60.187	3076.11	266.54	13.161	24.45	178.2	.617	.953	.775	.647
4.700	8965.7	9198.8	63.165	2.604	2400.48	59.982	3114.52	264.31	13.042	24.63	181.2	.620	.954	.780	.650
4.800	9206.4	9445.8	63.080	2.660	2415.20	59.834	3150.60	261.50	12.921	24.78	183.7	.623	.955	.785	.652
4.900	9448.8	9694.5	62.994	2.716	2430.86	59.666	3187.57	259.12	12.807	24.94	186.5	.627	.956	.790	.655
5.000	9692.8	9944.8	62.907	2.773	2448.67	59.452	3226.73	257.54	12.710	25.12	189.7	.630	.957	.796	.658
5.100	9938.5	10196.9	62.820	2.829	2465.22	59.266	3264.84	255.73	12.615	25.29	192.7	.633	.958	.801	.661
5.200	10185.8	10450.7	62.731	2.885	2482.17	59.071	3303.34	254.15	12.525	25.47	195.7	.637	.959	.807	.664
5.300	10434.9	10706.2	62.641	2.942	2499.70	58.863	3342.47	252.84	12.441	25.65	199.0	.640	.960	.812	.667
5.400	10685.8	10963.6	62.550	2.998	2517.44	58.650	3382.10	251.69	12.361	25.83	202.3	.643	.960	.818	.670
5.500	10938.4	11222.8	62.458	3.055	2534.88	58.445	3421.39	250.54	12.282	26.01	205.5	.646	.961	.824	.673
5.600	11192.8	11483.8	62.364	3.111	2553.02	58.223	3461.43	249.68	12.213	26.19	209.0	.650	.962	.830	.675
5.700	11449.0	11746.7	62.269	3.168	2571.82	57.985	3502.51	249.08	12.150	26.39	212.6	.653	.962	.836	.678
5.800	11707.0	12011.4	62.172	3.225	2590.10	57.758	3543.10	248.40	12.089	26.57	216.1	.656	.963	.842	.681
5.900	11967.0	12278.1	62.074	3.282	2608.25	57.532	3583.40	247.75	12.032	26.76	219.6	.659	.964	.848	.684
6.000	12228.8	12546.7	61.974	3.339	2626.78	57.297	3624.62	247.26	11.979	26.95	223.2	.662	.964	.854	.687
6.100	12492.3	12817.1	61.873	3.397	2645.53	57.055	3666.11	246.89	11.929	27.14	226.9	.666	.965	.860	.690
6.200	12757.8	13089.5	61.770	3.454	2664.02	56.818	3706.59	246.50	11.881	27.33	230.4	.669	.965	.866	.693

**Ship: RoRo (test)**  
**HYDROSTATIC TABLE**

Trim: .500 M

T (M)	VOL (M3)	DIS (TM)	XB (M)	ZB (M)	WPA (M2)	XWP (M)	WS (M2)	KML (M)	KMT (M)	TPC	MCT	CB	CM	CWP	CP
4.300	8065.6	8275.3	62.423	2.393	2360.53	60.324	2971.40	285.02	13.641	24.22	170.8	.610	.950	.767	.642
4.400	8302.5	8518.3	62.359	2.450	2375.40	60.058	3011.09	280.47	13.496	24.37	173.2	.613	.951	.772	.645
4.500	8540.6	8762.7	62.290	2.506	2388.57	59.716	3053.65	275.05	13.361	24.51	179.1	.617	.952	.776	.648
4.600	8780.2	9008.5	62.218	2.562	2404.13	59.518	3091.97	271.83	13.230	24.67	181.9	.620	.953	.781	.651
4.700	9021.4	9256.0	62.143	2.619	2420.29	59.324	3129.93	269.09	13.106	24.83	184.8	.624	.954	.787	.654
4.800	9264.3	9505.2	62.066	2.675	2436.82	59.127	3168.14	266.66	12.986	25.00	187.7	.627	.955	.792	.657
4.900	9508.9	9756.1	61.988	2.732	2454.21	58.914	3207.37	264.67	12.879	25.18	190.9	.631	.956	.798	.660
5.000	9755.1	10008.8	61.908	2.789	2471.31	58.709	3246.18	262.76	12.778	25.36	194.0	.634	.957	.803	.663
5.100	10003.2	10263.2	61.826	2.845	2488.85	58.496	3285.44	261.12	12.683	25.54	197.2	.637	.958	.809	.665
5.200	10253.0	10519.5	61.742	2.902	2506.96	58.272	3325.54	259.76	12.595	25.72	200.5	.641	.959	.815	.668
5.300	10504.6	10777.7	61.656	2.959	2525.36	58.042	3365.84	258.60	12.511	25.91	204.0	.644	.959	.821	.671
5.400	10758.1	11037.8	61.568	3.016	2544.04	57.806	3406.65	257.62	12.432	26.10	207.5	.647	.960	.827	.674
5.500	11013.4	11299.7	61.478	3.073	2562.81	57.569	3447.55	256.76	12.358	26.29	211.1	.651	.961	.833	.677
5.600	11270.6	11563.6	61.386	3.131	2581.85	57.325	3488.89	256.05	12.289	26.49	214.8	.654	.962	.839	.680
5.700	11529.6	11829.4	61.292	3.188	2600.90	57.082	3530.17	255.43	12.224	26.68	218.4	.657	.962	.845	.683
5.800	11790.7	12097.2	61.197	3.245	2620.10	56.834	3571.88	254.92	12.162	26.88	222.2	.661	.963	.851	.686
5.900	12053.6	12367.0	61.099	3.303	2638.90	56.595	3613.30	254.35	12.102	27.08	225.8	.664	.964	.858	.689
6.000	12318.4	12638.7	61.000	3.361	2657.88	56.351	3655.27	253.90	12.047	27.27	229.5	.667	.964	.864	.692
6.100	12585.0	12912.2	60.899	3.418	2676.70	56.109	3696.39	253.46	11.994	27.46	233.1	.670	.965	.870	.695
6.200	12853.6	13187.8	60.797	3.476	2693.72	55.906	3737.20	252.58	11.943	27.64	236.2	.674	.965	.875	.698

**Ship: RoRo (test)**  
**HYDROSTATIC TABLE**

Trim: 1.000 M

T (M)	VOL (M3)	DIS (TM)	XB (M)	ZB (M)	WPA (M2)	XWP (M)	WS (M2)	KML (M)	KMT (M)	TPC	MCT	CB	CM	CWP	CP
4.300	8117.3	8328.3	61.321	2.412	2384.92	59.719	2985.95	292.86	13.720	24.47	175.1	.613	.950	.775	.646
4.400	8356.6	8573.9	61.272	2.469	2402.32	59.473	3025.84	289.37	13.576	24.65	178.0	.617	.951	.781	.649
4.500	8597.5	8821.1	61.219	2.525	2417.23	59.257	3064.23	285.19	13.435	24.80	180.4	.621	.952	.786	.652
4.600	8840.1	9069.9	61.161	2.582	2433.01	58.996	3104.49	281.41	13.304	24.96	183.1	.625	.953	.791	.655
4.700	9084.1	9320.3	61.099	2.639	2446.97	58.663	3147.21	276.69	13.180	25.11	185.4	.628	.954	.795	.658
4.800	9329.5	9572.0	61.031	2.696	2462.37	58.371	3188.81	273.10	13.063	25.26	192.4	.632	.955	.800	.661
4.900	9576.6	9825.6	60.960	2.753	2479.80	58.139	3229.03	270.90	12.953	25.44	195.6	.635	.956	.806	.664
5.000	9825.4	10080.9	60.885	2.811	2497.78	57.904	3269.29	269.08	12.852	25.63	199.0	.639	.957	.812	.667
5.100	10076.2	10338.1	60.808	2.868	2516.03	57.667	3309.70	267.50	12.758	25.81	202.4	.642	.958	.818	.670
5.200	10328.8	10597.3	60.728	2.925	2534.89	57.419	3350.97	266.23	12.669	26.01	205.9	.646	.958	.824	.673
5.300	10583.2	10858.4	60.645	2.983	2554.11	57.166	3392.57	265.19	12.586	26.20	209.6	.649	.959	.830	.676
5.400	10839.6	11121.5	60.560	3.040	2573.33	56.914	3433.91	264.25	12.508	26.40	213.3	.652	.960	.836	.680
5.500	11098.0	11386.6	60.471	3.098	2592.69	56.659	3475.94	263.44	12.434	26.60	217.0	.656	.961	.843	.683
5.600	11358.3	11653.6	60.381	3.156	2612.21	56.402	3518.12	262.77	12.364	26.80	220.8	.659	.961	.849	.686
5.700	11620.5	11922.6	60.288	3.214	2631.71	56.146	3559.32	262.17	12.299	27.00	224.5	.663	.962	.855	.689
5.800	11884.6	12193.6	60.193	3.272	2650.51	55.905	3601.61	261.44	12.234	27.19	228.1	.666	.963	.861	.692
5.900	12150.7	12466.6	60.096	3.330	2669.37	55.664	3644.00	260.79	12.173	27.39	231.6	.669	.963	.867	.695
6.000	12418.7	12741.6	59.997	3.388	2688.18	55.424	3686.55	260.19	12.115	27.58	235.2	.673	.964	.874	.698
6.100	12688.6	13018.5	59.897	3.446	2707.83	55.164	3729.33	259.90	12.064	27.78	238.9	.676	.965	.880	.701
6.200	12960.4	13297.4	59.795	3.505	2727.46	54.904	3772.19	259.65	12.016	27.98	242.6	.679	.965	.886	.704

**Ship: RoRo (test)**  
**HYDROSTATIC TABLE**

Trim: 1.500 M

T (M)	VOL (M3)	DIS (TM)	XB (M)	ZB (M)	WPA (M2)	XWP (M)	WS (M2)	KML (M)	KMT (M)	TPC	MCT	CB	CM	CWP	CP
4.300	8175.3	8387.9	60.194	2.436	2408.81	59.022	3003.72	299.83	13.803	24.71	179.5	.618	.950	.783	.651
4.400	8417.1	8635.9	60.157	2.493	2426.03	58.814	3042.78	296.31	13.654	24.89	182.3	.622	.951	.788	.654
4.500	8660.6	8885.8	60.116	2.551	2443.93	58.578	3082.82	293.19	13.516	25.08	185.4	.625	.952	.794	.657
4.600	8905.9	9137.4	60.070	2.608	2461.96	58.323	3123.46	290.24	13.386	25.26	188.5	.629	.953	.800	.660
4.700	9153.0	9391.0	60.019	2.665	2479.90	58.051	3164.95	287.37	13.264	25.44	191.6	.633	.954	.806	.663
4.800	9401.8	9646.3	59.964	2.723	2497.50	57.758	3207.19	284.45	13.149	25.62	194.7	.637	.955	.812	.667
4.900	9652.4	9903.3	59.903	2.781	2514.62	57.440	3250.05	281.41	13.041	25.80	197.8	.640	.956	.817	.670
5.000	9904.5	10162.0	59.835	2.838	2529.39	57.043	3295.93	277.17	12.940	25.95	200.8	.644	.957	.822	.673
5.100	10158.3	10422.5	59.762	2.896	2548.31	56.755	3338.83	275.47	12.846	26.15	208.6	.647	.958	.828	.676
5.200	10414.0	10684.8	59.685	2.954	2567.73	56.481	3381.06	274.18	12.757	26.34	212.3	.651	.958	.834	.679
5.300	10671.8	10949.3	59.605	3.012	2587.49	56.206	3423.78	273.13	12.673	26.55	216.2	.654	.959	.841	.682
5.400	10931.5	11215.7	59.521	3.070	2606.98	55.941	3465.66	272.11	12.593	26.75	219.9	.658	.960	.847	.685
5.500	11193.1	11484.1	59.435	3.129	2626.39	55.679	3508.37	271.17	12.516	26.95	223.6	.661	.961	.854	.688
5.600	11456.6	11754.5	59.345	3.187	2645.57	55.425	3551.15	270.26	12.443	27.14	227.2	.665	.961	.860	.692
5.700	11722.2	12026.9	59.254	3.245	2665.49	55.155	3594.13	269.65	12.376	27.35	231.0	.668	.962	.866	.695
5.800	11989.6	12301.3	59.160	3.304	2684.64	54.904	3636.34	268.90	12.312	27.54	234.6	.672	.963	.872	.698
5.900	12259.0	12577.7	59.064	3.363	2703.11	54.668	3677.85	268.04	12.251	27.73	237.9	.675	.963	.878	.701
6.000	12530.3	12856.1	58.965	3.421	2722.40	54.415	3720.55	267.47	12.195	27.93	240.5	.679	.964	.885	.704
6.100	12803.5	13136.3	58.866	3.480	2738.42	54.235	3760.15	266.02	12.128	28.10	244.2	.682	.964	.890	.707
6.200	13078.0	13418.0	58.767	3.539	2751.02	54.130	3796.42	263.71	12.056	28.23	247.1	.686	.965	.894	.710

**Ship: RoRo (test)**  
**HYDROSTATIC TABLE**

Trim: 2.000 M

T (M)	VOL (M3)	DIS (TM)	XB (M)	ZB (M)	WPA (M2)	XWP (M)	WS (M2)	KML (M)	KMT (M)	TPC	MCT	CB	CM	CWP	CP
4.300	8240.7	8455.0	59.042	2.467	2433.20	58.263	3023.35	306.56	13.887	24.97	183.9	.623	.949	.791	.656
4.400	8485.1	8705.7	59.016	2.524	2452.44	58.032	3064.26	303.67	13.740	25.16	187.2	.627	.951	.797	.659
4.500	8731.3	8958.3	58.985	2.582	2471.97	57.782	3105.73	301.03	13.602	25.36	190.6	.631	.952	.803	.663
4.600	8979.5	9213.0	58.947	2.640	2491.47	57.522	3147.50	298.54	13.473	25.56	194.0	.634	.953	.810	.666
4.700	9229.7	9469.7	58.905	2.698	2511.13	57.249	3189.83	296.25	13.352	25.76	197.5	.638	.954	.816	.669
4.800	9481.9	9728.4	58.857	2.756	2530.74	56.964	3232.49	294.06	13.237	25.97	201.0	.642	.955	.822	.672
4.900	9735.9	9989.1	58.803	2.814	2550.01	56.668	3275.05	291.84	13.129	26.16	204.5	.646	.956	.829	.676
5.000	9992.0	10251.8	58.744	2.873	2569.00	56.357	3318.75	289.60	13.027	26.36	207.9	.649	.956	.835	.679
5.100	10249.9	10516.4	58.680	2.931	2587.56	56.025	3363.18	287.24	12.931	26.55	211.3	.653	.957	.841	.682
5.200	10509.6	10782.9	58.609	2.990	2604.14	55.640	3409.13	283.97	12.841	26.72	214.2	.657	.958	.846	.685
5.300	10770.8	11050.9	58.532	3.048	2620.73	55.287	3453.85	281.05	12.754	26.89	222.2	.660	.959	.852	.689
5.400	11034.0	11320.9	58.451	3.107	2639.60	55.017	3497.35	279.62	12.670	27.08	225.9	.664	.960	.858	.692
5.500	11299.1	11592.9	58.366	3.166	2658.74	54.750	3540.62	278.42	12.591	27.28	229.4	.668	.960	.864	.695
5.600	11566.2	11866.9	58.279	3.225	2677.74	54.491	3583.91	277.30	12.516	27.47	232.9	.671	.961	.870	.698
5.700	11835.2	12142.9	58.188	3.284	2697.71	54.215	3627.46	276.57	12.449	27.68	236.5	.675	.962	.877	.702
5.800	12106.1	12420.8	58.095	3.343	2717.07	53.954	3668.95	275.74	12.383	27.88	239.9	.678	.962	.883	.705
5.900	12378.5	12700.3	58.003	3.402	2731.13	53.812	3706.72	273.44	12.300	28.02	243.2	.682	.963	.888	.708
6.000	12652.0	12981.0	57.912	3.461	2739.40	53.797	3738.79	269.63	12.216	28.11	244.9	.685	.964	.890	.711
6.100	12926.3	13262.4	57.825	3.520	2746.13	53.817	3769.40	265.57	12.133	28.17	246.3	.689	.964	.892	.714
6.200	13201.3	13544.5	57.741	3.579	2752.51	53.845	3799.77	261.59	12.052	28.24	247.6	.692	.965	.895	.717



**Ship: RoRo (test)**  
**HYDROSTATIC TABLE**

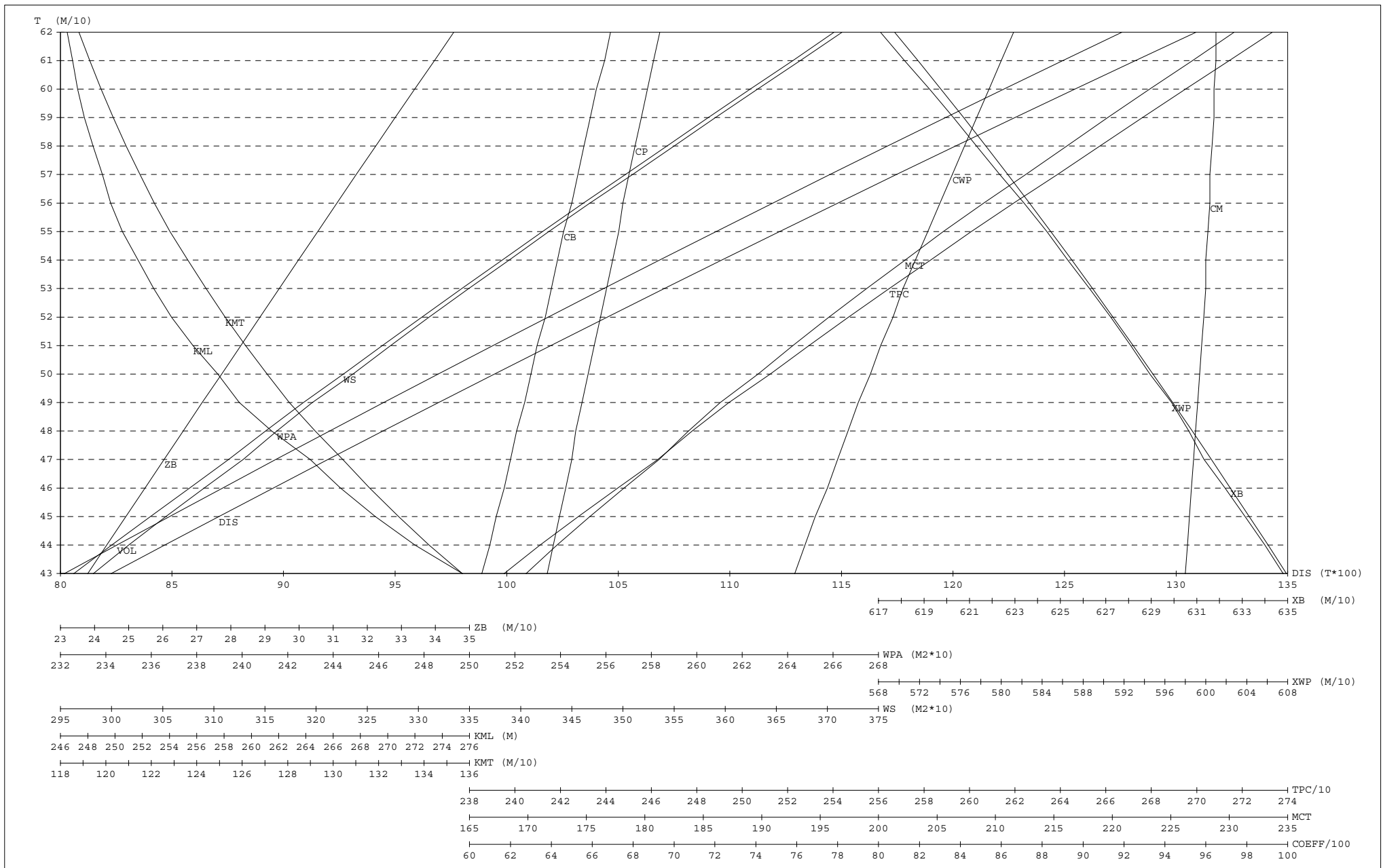
Trim: 2.500 M

T (M)	VOL (M3)	DIS (TM)	XB (M)	ZB (M)	WPA (M2)	XWP (M)	WS (M2)	KML (M)	KMT (M)	TPC	MCT	CB	CM	CWP	CP
4.300	8314.5	8530.7	57.866	2.504	2462.47	57.344	3049.56	314.50	13.987	25.26	189.3	.628	.949	.800	.662
4.400	8561.7	8784.3	57.848	2.562	2483.47	57.095	3092.03	312.17	13.841	25.48	193.0	.632	.950	.807	.665
4.500	8811.0	9040.1	57.823	2.620	2504.47	56.836	3134.67	309.99	13.704	25.70	196.7	.636	.951	.814	.669
4.600	9062.5	9298.1	57.793	2.679	2525.59	56.564	3177.85	307.99	13.576	25.91	200.5	.640	.953	.821	.672
4.700	9316.0	9558.2	57.756	2.737	2546.47	56.286	3221.15	306.03	13.454	26.13	204.3	.644	.954	.828	.676
4.800	9571.6	9820.5	57.713	2.796	2567.26	55.994	3264.90	304.12	13.340	26.34	208.0	.648	.955	.834	.679
4.900	9829.3	10084.9	57.665	2.855	2587.71	55.707	3307.59	302.28	13.230	26.55	211.7	.652	.955	.841	.682
5.000	10089.0	10351.4	57.611	2.914	2607.45	55.422	3351.27	300.26	13.124	26.75	215.2	.656	.956	.847	.686
5.100	10350.8	10619.9	57.552	2.973	2626.80	55.129	3395.11	298.21	13.024	26.95	218.7	.660	.957	.854	.689
5.200	10614.5	10890.5	57.487	3.032	2645.57	54.832	3439.29	296.05	12.928	27.14	222.0	.663	.958	.860	.692
5.300	10880.1	11163.0	57.418	3.091	2664.51	54.502	3484.24	293.95	12.841	27.34	225.3	.667	.959	.866	.696
5.400	11147.6	11437.4	57.344	3.151	2682.87	54.156	3529.50	291.69	12.759	27.53	228.5	.671	.960	.872	.699
5.500	11416.6	11713.5	57.264	3.210	2698.46	53.755	3575.84	288.18	12.679	27.69	230.8	.675	.960	.877	.702
5.600	11687.1	11990.9	57.180	3.269	2712.38	53.536	3616.40	285.00	12.585	27.83	239.3	.678	.961	.881	.706
5.700	11958.7	12269.6	57.097	3.329	2720.78	53.501	3649.11	280.63	12.487	27.92	241.1	.682	.962	.884	.709
5.800	12231.1	12549.1	57.017	3.388	2727.44	53.509	3679.99	275.98	12.390	27.98	242.5	.685	.962	.886	.712
5.900	12504.2	12829.3	56.940	3.447	2733.81	53.527	3710.55	271.49	12.297	28.05	243.8	.689	.963	.888	.715
6.000	12777.9	13110.1	56.868	3.505	2739.91	53.553	3740.87	267.14	12.207	28.11	245.1	.692	.964	.890	.718
6.100	13052.2	13391.5	56.798	3.564	2745.77	53.585	3771.00	262.93	12.121	28.17	246.3	.695	.964	.892	.721
6.200	13327.0	13673.5	56.732	3.622	2751.44	53.623	3801.00	258.86	12.037	28.23	247.4	.699	.965	.894	.724

Cintranaval-Defcar, S.L.  
03/18/2004

Ship: RoRo (TEST)  
HYDROSTATIC CURVES  
Trim: .000 M

TEST



**Ship: EXAMPLE**  
**KN TABLE (M) (Fixed Trim)**

Main Dimensions

Length Over All.....:	60.000 M.
L. Between Perpendiculars:	55.000 M.
Moulded Beam.....:	13.300 M.
Moulded Depth.....:	5.000 M.
Design Draught.....:	3.800 M.

**REMARK:**

EXAMPLE



Ship: EXAMPLE  
KN TABLE (M) (Fixed Trim)

Trim: .000 m

DIS(T)	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°
1000.0	.817	1.639	2.421	3.116	3.665	4.053	4.335	4.553	4.729	4.870	4.945	4.956	4.926	4.848	4.723	4.557
1100.0	.788	1.578	2.336	3.025	3.576	3.965	4.256	4.487	4.677	4.815	4.895	4.926	4.907	4.836	4.718	4.556
1200.0	.763	1.521	2.257	2.937	3.483	3.876	4.178	4.423	4.624	4.759	4.843	4.892	4.883	4.821	4.709	4.553
1300.0	.741	1.472	2.187	2.852	3.384	3.785	4.102	4.364	4.567	4.702	4.793	4.847	4.853	4.798	4.695	4.547
1400.0	.720	1.429	2.124	2.766	3.284	3.693	4.027	4.304	4.506	4.647	4.745	4.801	4.810	4.770	4.676	4.537
1500.0	.701	1.390	2.068	2.679	3.183	3.602	3.953	4.239	4.444	4.592	4.699	4.756	4.767	4.734	4.653	4.524
1600.0	.683	1.355	2.015	2.593	3.084	3.513	3.880	4.169	4.381	4.539	4.652	4.713	4.726	4.695	4.626	4.508
1700.0	.666	1.323	1.959	2.507	2.989	3.425	3.804	4.096	4.316	4.486	4.604	4.670	4.687	4.659	4.592	4.490
1800.0	.650	1.295	1.900	2.422	2.898	3.339	3.726	4.020	4.250	4.431	4.555	4.626	4.649	4.626	4.562	4.461
1900.0	.636	1.269	1.839	2.340	2.812	3.258	3.644	3.943	4.185	4.374	4.505	4.582	4.610	4.594	4.536	4.440
2000.0	.623	1.241	1.777	2.262	2.730	3.179	3.561	3.866	4.118	4.314	4.453	4.536	4.572	4.563	4.512	4.423
2100.0	.612	1.207	1.714	2.187	2.653	3.100	3.476	3.789	4.051	4.253	4.398	4.490	4.533	4.531	4.489	4.407
2200.0	.602	1.165	1.651	2.118	2.582	3.022	3.393	3.713	3.981	4.190	4.341	4.441	4.493	4.499	4.465	4.392
2300.0	.593	1.119	1.589	2.051	2.514	2.943	3.311	3.637	3.911	4.125	4.284	4.391	4.452	4.467	4.441	4.377

**Ship: EXAMPLE**  
**KN TABLE (M) (Fixed Trim)**

Trim: .500 m

<u>DIS(T)</u>	<u>5°</u>	<u>10°</u>	<u>15°</u>	<u>20°</u>	<u>25°</u>	<u>30°</u>	<u>35°</u>	<u>40°</u>	<u>45°</u>	<u>50°</u>	<u>55°</u>	<u>60°</u>	<u>65°</u>	<u>70°</u>	<u>75°</u>	<u>80°</u>
1000.0	.843	1.683	2.472	3.171	3.707	4.077	4.346	4.554	4.721	4.855	4.928	4.933	4.897	4.816	4.689	4.520
1100.0	.812	1.614	2.380	3.074	3.605	3.979	4.260	4.482	4.665	4.799	4.873	4.900	4.878	4.806	4.686	4.522
1200.0	.783	1.551	2.294	2.976	3.500	3.881	4.175	4.413	4.609	4.741	4.819	4.861	4.856	4.791	4.679	4.522
1300.0	.756	1.497	2.219	2.877	3.392	3.782	4.092	4.349	4.550	4.683	4.767	4.816	4.820	4.770	4.666	4.517
1400.0	.731	1.448	2.151	2.779	3.283	3.683	4.011	4.286	4.488	4.625	4.719	4.771	4.779	4.742	4.649	4.509
1500.0	.708	1.405	2.087	2.681	3.174	3.586	3.932	4.218	4.423	4.568	4.671	4.728	4.738	4.703	4.627	4.498
1600.0	.687	1.366	2.024	2.585	3.068	3.491	3.854	4.145	4.356	4.512	4.624	4.686	4.699	4.666	4.595	4.484
1700.0	.668	1.332	1.958	2.491	2.966	3.398	3.776	4.069	4.289	4.457	4.576	4.643	4.661	4.633	4.564	4.459
1800.0	.651	1.300	1.889	2.400	2.870	3.308	3.696	3.991	4.220	4.401	4.527	4.600	4.623	4.602	4.538	4.436
1900.0	.636	1.268	1.820	2.312	2.779	3.222	3.612	3.912	4.152	4.342	4.476	4.555	4.585	4.570	4.514	4.418
2000.0	.623	1.231	1.750	2.229	2.693	3.141	3.527	3.833	4.084	4.282	4.423	4.510	4.547	4.539	4.490	4.402
2100.0	.611	1.188	1.681	2.150	2.612	3.061	3.440	3.754	4.015	4.220	4.368	4.463	4.508	4.508	4.467	4.387
2200.0	.600	1.138	1.614	2.077	2.539	2.981	3.355	3.675	3.945	4.157	4.311	4.414	4.468	4.477	4.444	4.372
2300.0	.588	1.086	1.548	2.007	2.469	2.902	3.271	3.597	3.874	4.092	4.254	4.364	4.427	4.445	4.420	4.357

**Ship: EXAMPLE**  
**KN TABLE (M) (Fixed Trim)**

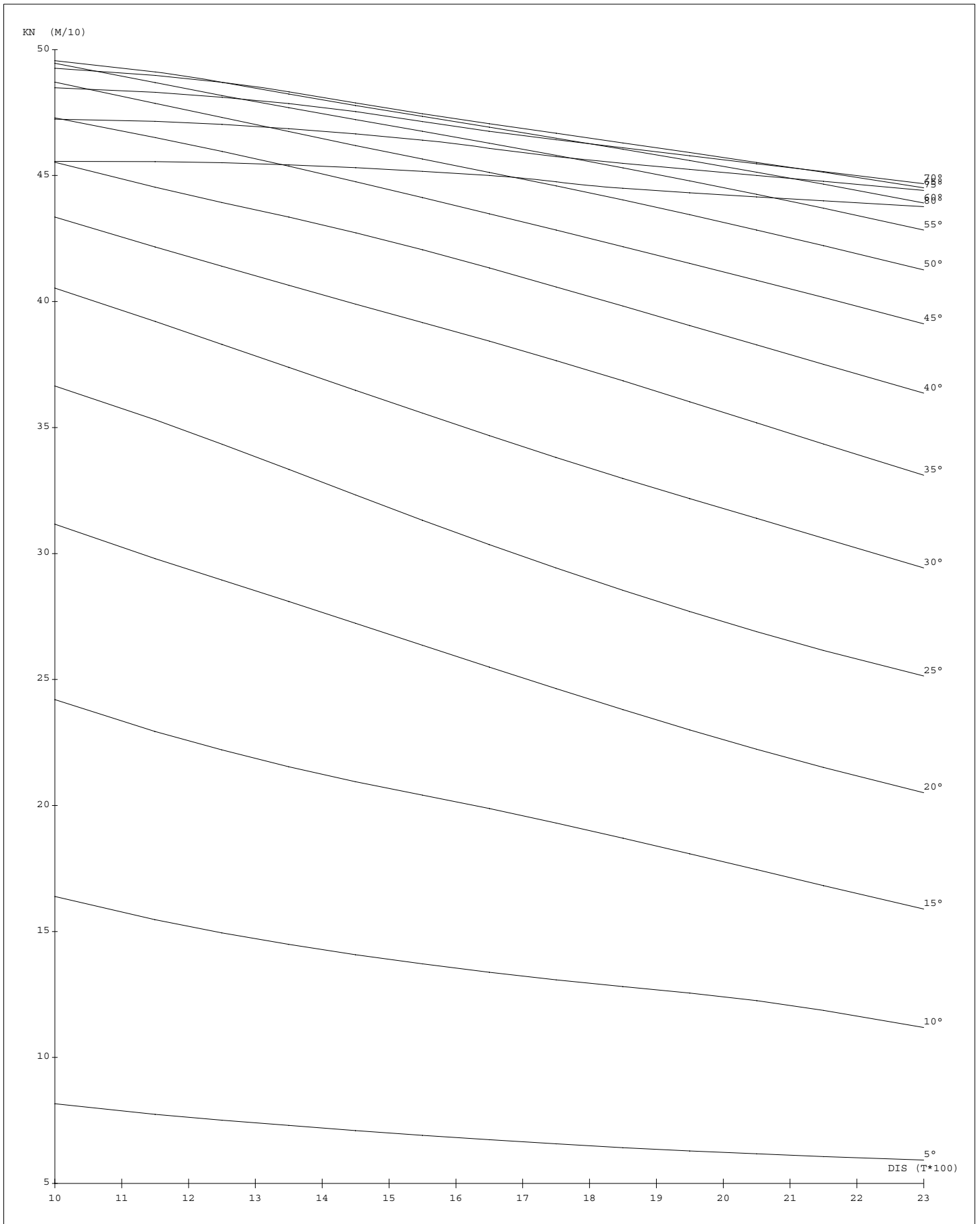
Trim: 1.000 m

DIS(T)	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°
1000.0	.869	1.722	2.521	3.221	3.737	4.093	4.352	4.551	4.710	4.836	4.905	4.910	4.866	4.783	4.654	4.483
1100.0	.832	1.647	2.421	3.113	3.624	3.986	4.259	4.474	4.650	4.780	4.850	4.870	4.848	4.774	4.653	4.488
1200.0	.798	1.578	2.328	3.003	3.509	3.879	4.167	4.400	4.591	4.722	4.795	4.829	4.824	4.761	4.648	4.491
1300.0	.767	1.518	2.247	2.892	3.392	3.773	4.078	4.331	4.531	4.662	4.742	4.785	4.786	4.740	4.636	4.487
1400.0	.738	1.465	2.171	2.781	3.275	3.668	3.991	4.263	4.466	4.602	4.692	4.742	4.747	4.706	4.620	4.481
1500.0	.712	1.417	2.097	2.674	3.159	3.565	3.907	4.193	4.399	4.543	4.644	4.701	4.709	4.672	4.593	4.471
1600.0	.689	1.375	2.022	2.570	3.046	3.465	3.826	4.118	4.330	4.484	4.595	4.658	4.672	4.640	4.564	4.451
1700.0	.669	1.336	1.946	2.469	2.938	3.367	3.744	4.040	4.260	4.427	4.547	4.615	4.635	4.608	4.539	4.428
1800.0	.652	1.298	1.870	2.371	2.837	3.273	3.662	3.960	4.189	4.369	4.497	4.572	4.597	4.577	4.515	4.412
1900.0	.636	1.257	1.793	2.278	2.741	3.184	3.577	3.879	4.118	4.309	4.446	4.527	4.559	4.546	4.491	4.397
2000.0	.622	1.212	1.717	2.190	2.652	3.099	3.490	3.798	4.048	4.248	4.392	4.482	4.521	4.515	4.467	4.381
2100.0	.609	1.161	1.643	2.108	2.569	3.018	3.402	3.716	3.977	4.186	4.337	4.435	4.483	4.485	4.445	4.366
2200.0	.591	1.105	1.573	2.033	2.493	2.938	3.315	3.636	3.907	4.122	4.280	4.386	4.442	4.453	4.422	4.352
2300.0	.568	1.048	1.505	1.961	2.422	2.858	3.230	3.555	3.836	4.057	4.222	4.336	4.401	4.422	4.399	4.338

Cintranaval-Defcar, S.L.  
03/18/2004

Ship: EXAMPLE  
CROSS CURVES (Fixed Trim)  
Trim: .000 M

EXAMPLE



**Ship: TEST**  
**Table of Soundings**

Trim: .500 m

Compartment: CHAIN LOCKER

Permeability: 1

Content: A.Sentinas

Density of Content: 1

DEPTH	ULLAGE	VOL (M3)	W (T)	XG (M)	YG (M)	ZG (M)	WPA (M2)	MTI (M4)
.000	2.708	.131	.131	52.156	.000	5.019	3.47	2.465
.100	2.608	.478	.478	52.176	.000	5.069	3.47	2.465
.200	2.508	.825	.825	52.179	.000	5.119	3.47	2.465
.300	2.408	1.172	1.172	52.180	.000	5.169	3.47	2.465
.400	2.308	1.519	1.519	52.181	.000	5.219	3.47	2.465
.500	2.208	1.867	1.867	52.181	.000	5.269	3.47	2.465
.600	2.108	2.214	2.214	52.182	.000	5.319	3.47	2.465
.700	2.008	2.561	2.561	52.182	.000	5.369	3.47	2.465
.800	1.908	2.908	2.908	52.182	.000	5.419	3.47	2.465
.900	1.808	3.255	3.255	52.182	.000	5.469	3.47	2.465
1.000	1.708	3.602	3.602	52.182	.000	5.519	3.47	2.465
1.100	1.608	3.950	3.950	52.182	.000	5.569	3.47	2.465
1.200	1.508	4.297	4.297	52.182	.000	5.619	3.47	2.465
1.300	1.408	4.644	4.644	52.182	.000	5.669	3.47	2.465
1.400	1.308	4.991	4.991	52.183	.000	5.719	3.47	2.465
1.500	1.208	5.338	5.338	52.183	.000	5.769	3.47	2.465
1.600	1.108	5.686	5.686	52.183	.000	5.819	3.47	2.465
1.700	1.008	6.033	6.033	52.183	.000	5.869	3.47	2.465
1.800	.908	6.380	6.380	52.183	.000	5.919	3.47	2.465
1.900	.808	6.727	6.727	52.183	.000	5.969	3.47	2.465
2.000	.708	7.074	7.074	52.183	.000	6.019	3.47	2.465
2.100	.608	7.421	7.421	52.183	.000	6.069	3.47	2.465
2.200	.508	7.769	7.769	52.183	.000	6.119	3.47	2.465
2.300	.408	8.116	8.116	52.183	.000	6.169	3.47	2.465
2.400	.308	8.463	8.463	52.183	.000	6.219	3.47	2.465
2.500	.208	8.810	8.810	52.183	.000	6.269	3.47	2.465
2.600	.108	9.157	9.157	52.183	.000	6.319	3.47	2.465
2.700	.008	9.504	9.504	52.183	.000	6.369	3.47	2.465
2.708	.000	9.531	9.531	52.183	.000	6.373	3.09	2.176



**Ship: RoRo (test)**  
**Table of Capacities**

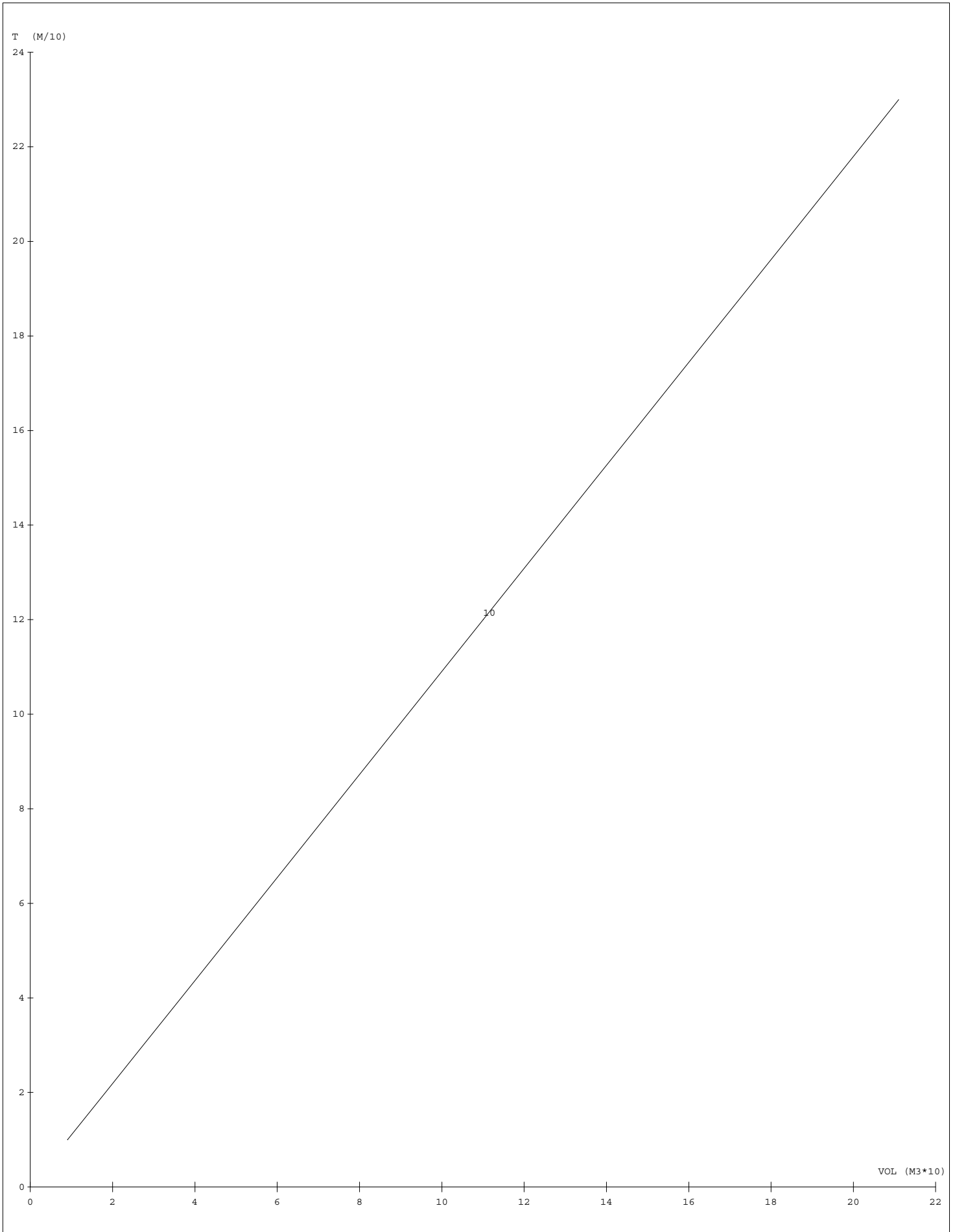
Compartment: FUEL OIL 2 s.86-s.106

Permeability: .95

Content: Fuel Oil

Density of Content: .95

H (M)	DEPTH	ULLAGE	VOL (M3)	W (T)	XG (M)	YG (M)	ZG (M)	WPA (M2)	MTI (M4)
.100	.100	2.200	9.548	9.070	69.532	3.469	.050	101.70	396.100
.200	.200	2.100	19.211	18.250	69.566	3.489	.100	101.72	396.272
.300	.300	2.000	28.874	27.430	69.577	3.495	.151	101.72	396.272
.400	.400	1.900	38.537	36.610	69.583	3.498	.201	101.72	396.272
.500	.500	1.800	48.201	45.790	69.586	3.500	.251	101.72	396.272
.600	.600	1.700	57.864	54.970	69.589	3.501	.301	101.72	396.272
.700	.700	1.600	67.527	64.150	69.590	3.502	.351	101.72	396.272
.800	.800	1.500	77.190	73.331	69.592	3.503	.401	101.72	396.272
.900	.900	1.400	86.853	82.511	69.592	3.503	.451	101.72	396.272
1.000	1.000	1.300	96.516	91.691	69.593	3.504	.501	101.72	396.272
1.100	1.100	1.200	106.179	100.871	69.594	3.504	.551	101.72	396.272
1.200	1.200	1.100	115.843	110.051	69.594	3.504	.601	101.72	396.272
1.300	1.300	1.000	125.506	119.231	69.595	3.505	.651	101.72	396.272
1.400	1.400	.900	135.169	128.411	69.595	3.505	.701	101.72	396.272
1.500	1.500	.800	144.832	137.591	69.595	3.505	.751	101.72	396.272
1.600	1.600	.700	154.495	146.771	69.596	3.505	.801	101.72	396.272
1.700	1.700	.600	164.159	155.951	69.596	3.505	.851	101.72	396.272
1.800	1.800	.500	173.822	165.131	69.596	3.505	.901	101.72	396.272
1.900	1.900	.400	183.485	174.311	69.596	3.506	.951	101.72	396.272
2.000	2.000	.300	193.148	183.491	69.597	3.506	1.001	101.72	396.272
2.100	2.100	.200	202.811	192.671	69.597	3.506	1.051	101.72	396.272
2.200	2.200	.100	212.475	201.851	69.597	3.506	1.101	101.72	396.272
2.299	2.299	.001	222.041	210.939	69.597	3.506	1.150	101.72	396.272
2.300	2.300	.000	222.138	211.031	69.597	3.506	1.151	.00	.000



Ship: EXAMPLE

Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.

DESCRIPTION	CONTENTS	%	WEIGHT	XG	MOM. X	YG	MOM. Y	ZG	MOM. Z	DENS.	FSI	I*D
<b>LightShip</b>			<b>1173.21</b>	<b>27.430</b>	<b>32181.1</b>	<b>.239</b>	<b>280.4</b>	<b>5.571</b>	<b>6535.9</b>			
CREW & EFFECTS			7.00	40.800	285.6	.000	.0	8.500	59.5			
FORE STORE			8.00	53.400	427.2	.000	.0	7.500	60.0			
MIDSHIP STORE			3.00	28.800	86.4	.000	.0	6.200	18.6			
SMALL TK.E.ROOM			1.00	12.000	12.0	.000	.0	3.000	3.0			
<b>Total MISCELLANEOUS</b>			<b>19.00</b>	<b>42.695</b>	<b>811.2</b>	<b>.000</b>	<b>.0</b>	<b>7.426</b>	<b>141.1</b>			
PROVISIONS			1.20	48.000	57.6	.000	.0	8.500	10.2			
<b>Total PROVISIONS</b>			<b>1.20</b>	<b>48.000</b>	<b>57.6</b>	<b>.000</b>	<b>.0</b>	<b>8.500</b>	<b>10.2</b>			
F01P_SIDE+DB.TK.(61-67) P	FUEL OIL											
F01S_SIDE+DB.TK.(61-67) S	FUEL OIL											
F02P_SIDE+DB.TK.(45-61) P	FUEL OIL											
F02S_SIDE+DB.TK.(45-61) S	FUEL OIL											
F03C_DB.TK.(45-61) CT.	FUEL OIL											
F04P_SIDE+DB.TK.(36-45) P	FUEL OIL											
F04S_SIDE+DB.TK.(36-45) S	FUEL OIL											
F05P_SIDE+DB.TK.(28-36) P	FUEL OIL											
F05S_SIDE+DB.TK.(28-36) S	FUEL OIL											
F07P_DEEP TK.(4-13) PT.	FUEL OIL											
F07S_DEEP TK.(4-13) ST.	FUEL OIL											
F08P_SETTLING TK.(4-10) P	FUEL OIL	62.6	13.00	4.292	55.8	-1.181	-15.4	3.012	39.2	.850	4.06	3.45
F08S_SETTLING TK.(4-10) S	FUEL OIL	62.6	13.00	4.292	55.8	1.181	15.4	3.012	39.2	.850	4.06	3.45
F06P_DAILY TK.(10-13) PT.	FUEL OIL	98.0	11.66	6.913	80.6	-1.190	-13.9	3.345	39.0	.850	2.03	1.73
F06S_DAILY TK.(10-13) ST.	FUEL OIL	98.0	11.66	6.913	80.6	1.190	13.9	3.345	39.0	.850	2.03	1.73
<b>Total FUEL OIL</b>		<b>10.0</b>	<b>49.33</b>	<b>5.532</b>	<b>272.9</b>	<b>.000</b>	<b>.0</b>	<b>3.169</b>	<b>156.3</b>			<b>10.35</b>
W01P_SIDE TK.(69-77) PT.	F.WATER											
W01S_SIDE TK.(69-77) ST.	F.WATER											
W02C_DB.TK.(69-77) CT.	F.WATER	55.2	15.75	43.729	688.6	.000	.0	.522	8.2	1.000	43.35	43.35
<b>Total FRESH WATER</b>		<b>10.0</b>	<b>15.75</b>	<b>43.729</b>	<b>688.6</b>	<b>.000</b>	<b>.0</b>	<b>.522</b>	<b>8.2</b>			<b>43.35</b>
L01P_DIRTY OIL TK.(17-21)	LUB.OIL	90.0	4.26	11.476	48.9	-1.223	-5.2	1.448	6.2	.920	3.20	2.94
L02S_SLUDGE TK.(17-21) ST	LUB.OIL	90.0	4.26	11.476	48.9	1.223	5.2	1.448	6.2	.920	3.20	2.94
<b>Total LUB-OIL</b>			<b>8.53</b>	<b>11.476</b>	<b>97.9</b>	<b>.000</b>	<b>.0</b>	<b>1.448</b>	<b>12.4</b>			<b>5.89</b>
B01C_FORE PEAK (86-PR) CT	W.BALLAST	100.0	33.91	52.722	1787.6	.000	.0	3.435	116.5	1.025		
B02P_SIDE TK.(77-86) PT.	W.BALLAST	100.0	50.42	48.355	2437.9	-2.919	-147.2	3.240	163.4	1.025	16.82	17.24
B02S_SIDE TK.(77-86) ST.	W.BALLAST	100.0	50.42	48.355	2437.9	2.919	147.2	3.240	163.4	1.025	16.82	17.24
B04P_SIDE TK.(PP-16) PT.	W.BALLAST											
B04S_SIDE TK.(PP-16) ST.	W.BALLAST											
B03C_STABILIZER TK.(16-28)	W.BALLAST											
<b>Total WATER BALLAST</b>			<b>134.74</b>	<b>49.454</b>	<b>6663.4</b>	<b>.000</b>	<b>.0</b>	<b>3.289</b>	<b>443.2</b>			<b>34.48</b>
S01C_WASTE TK.(61-67) CT.	SEWAGE	90.0	20.61	38.391	791.2	.000	.0	.704	14.5	1.000	32.51	32.51
<b>Total WASTE WATER</b>			<b>20.61</b>	<b>38.391</b>	<b>791.2</b>	<b>.000</b>	<b>.0</b>	<b>.704</b>	<b>14.5</b>			<b>32.51</b>
C.ON MAIN DECK			210.00	12.900	2709.0	-1.335	-280.4	6.350	1333.5			
<b>Total CARGO</b>			<b>210.00</b>	<b>12.900</b>	<b>2709.0</b>	<b>-1.335</b>	<b>-280.4</b>	<b>6.350</b>	<b>1333.5</b>			
<b>Deadweight</b>			<b>459.15</b>	<b>26.335</b>	<b>12091.8</b>	<b>-.611</b>	<b>-280.4</b>	<b>4.616</b>	<b>2119.4</b>			<b>126.58</b>
<b>LightShip</b>			<b>1173.21</b>	<b>27.430</b>	<b>32181.1</b>	<b>.239</b>	<b>280.4</b>	<b>5.571</b>	<b>6535.9</b>			
<b>Displacement</b>			<b>1632.36</b>	<b>27.122</b>	<b>44272.9</b>	<b>.000</b>	<b>.0</b>	<b>5.302</b>	<b>8655.3</b>			<b>126.58</b>

REMARK: Length Unities in Meters and Weight Unities in Metric Tons

Ship: EXAMPLE

Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.

DESCRIPTION	CONTENTS	%	WEIGHT	XG	MOM. X	YG	MOM. Y	ZG	MOM. Z	DENS.	FSI	I*D
<b>LightShip</b>			<b>1173.21</b>	<b>27.430</b>	<b>32181.1</b>	<b>.239</b>	<b>280.4</b>	<b>5.571</b>	<b>6535.9</b>			
CREW & EFFECTS			7.00	40.800	285.6	.000	.0	8.500	59.5			
FORE STORE			8.00	53.400	427.2	.000	.0	7.500	60.0			
MIDSHIP STORE			3.00	28.800	86.4	.000	.0	6.200	18.6			
SMALL TK.E.ROOM			1.00	12.000	12.0	.000	.0	3.000	3.0			
<b>Total MISCELLANEOUS</b>			<b>19.00</b>	<b>42.695</b>	<b>811.2</b>	<b>.000</b>	<b>.0</b>	<b>7.426</b>	<b>141.1</b>			
PROVISIONS			1.20	48.000	57.6	.000	.0	8.500	10.2			
<b>Total PROVISIONS</b>			<b>1.20</b>	<b>48.000</b>	<b>57.6</b>	<b>.000</b>	<b>.0</b>	<b>8.500</b>	<b>10.2</b>			
F01P_SIDE+DB.TK.(61-67) P	FUEL OIL											
F01S_SIDE+DB.TK.(61-67) S	FUEL OIL											
F02P_SIDE+DB.TK.(45-61) P	FUEL OIL											
F02S_SIDE+DB.TK.(45-61) S	FUEL OIL											
F03C_DB.TK.(45-61) CT.	FUEL OIL											
F04P_SIDE+DB.TK.(36-45) P	FUEL OIL											
F04S_SIDE+DB.TK.(36-45) S	FUEL OIL											
F05P_SIDE+DB.TK.(28-36) P	FUEL OIL											
F05S_SIDE+DB.TK.(28-36) S	FUEL OIL											
F07P_DEEP TK.(4-13) PT.	FUEL OIL											
F07S_DEEP TK.(4-13) ST.	FUEL OIL											
F08P_SETTLING TK.(4-10) P	FUEL OIL	62.6	13.00	4.292	55.8	-1.181	-15.4	3.012	39.2	.850	4.06	3.45
F08S_SETTLING TK.(4-10) S	FUEL OIL	62.6	13.00	4.292	55.8	1.181	15.4	3.012	39.2	.850	4.06	3.45
F06P_DAILY TK.(10-13) PT.	FUEL OIL	98.0	11.66	6.913	80.6	-1.190	-13.9	3.345	39.0	.850	2.03	1.73
F06S_DAILY TK.(10-13) ST.	FUEL OIL	98.0	11.66	6.913	80.6	1.190	13.9	3.345	39.0	.850	2.03	1.73
<b>Total FUEL OIL</b>		<b>10.0</b>	<b>49.33</b>	<b>5.532</b>	<b>272.9</b>	<b>.000</b>	<b>.0</b>	<b>3.169</b>	<b>156.3</b>			<b>10.35</b>
W01P_SIDE TK.(69-77) PT.	F.WATER											
W01S_SIDE TK.(69-77) ST.	F.WATER											
W02C_DB.TK.(69-77) CT.	F.WATER	55.2	15.75	43.729	688.6	.000	.0	.522	8.2	1.000	43.35	43.35
<b>Total FRESH WATER</b>		<b>10.0</b>	<b>15.75</b>	<b>43.729</b>	<b>688.6</b>	<b>.000</b>	<b>.0</b>	<b>.522</b>	<b>8.2</b>			<b>43.35</b>
L01P_DIRTY OIL TK.(17-21)	LUB.OIL	90.0	4.26	11.476	48.9	-1.223	-5.2	1.448	6.2	.920	3.20	2.94
L02S_SLUDGE TK.(17-21) ST	LUB.OIL	90.0	4.26	11.476	48.9	1.223	5.2	1.448	6.2	.920	3.20	2.94
<b>Total LUB-OIL</b>			<b>8.53</b>	<b>11.476</b>	<b>97.9</b>	<b>.000</b>	<b>.0</b>	<b>1.448</b>	<b>12.4</b>			<b>5.89</b>
B01C_FORE PEAK (86-PR) CT	W.BALLAST	100.0	33.91	52.722	1787.6	.000	.0	3.435	116.5	1.025		
B02P_SIDE TK.(77-86) PT.	W.BALLAST	100.0	50.42	48.355	2437.9	-2.919	-147.2	3.240	163.4	1.025	16.82	17.24
B02S_SIDE TK.(77-86) ST.	W.BALLAST	100.0	50.42	48.355	2437.9	2.919	147.2	3.240	163.4	1.025	16.82	17.24
B04P_SIDE TK.(PP-16) PT.	W.BALLAST											
B04S_SIDE TK.(PP-16) ST.	W.BALLAST											
B03C_STABILIZER TK.(16-28)	W.BALLAST											
<b>Total WATER BALLAST</b>			<b>134.74</b>	<b>49.454</b>	<b>6663.4</b>	<b>.000</b>	<b>.0</b>	<b>3.289</b>	<b>443.2</b>			<b>34.48</b>
S01C_WASTE TK.(61-67) CT.	SEWAGE	90.0	20.61	38.391	791.2	.000	.0	.704	14.5	1.000	32.51	32.51
<b>Total WASTE WATER</b>			<b>20.61</b>	<b>38.391</b>	<b>791.2</b>	<b>.000</b>	<b>.0</b>	<b>.704</b>	<b>14.5</b>			<b>32.51</b>
C.ON MAIN DECK			210.00	12.900	2709.0	-1.335	-280.4	6.350	1333.5			
<b>Total CARGO</b>			<b>210.00</b>	<b>12.900</b>	<b>2709.0</b>	<b>-1.335</b>	<b>-280.4</b>	<b>6.350</b>	<b>1333.5</b>			
<b>Deadweight</b>			<b>459.15</b>	<b>26.335</b>	<b>12091.8</b>	<b>-.611</b>	<b>-280.4</b>	<b>4.616</b>	<b>2119.4</b>			<b>126.58</b>
<b>LightShip</b>			<b>1173.21</b>	<b>27.430</b>	<b>32181.1</b>	<b>.239</b>	<b>280.4</b>	<b>5.571</b>	<b>6535.9</b>			
<b>Displacement</b>			<b>1632.36</b>	<b>27.122</b>	<b>44272.9</b>	<b>.000</b>	<b>.0</b>	<b>5.302</b>	<b>8655.3</b>			<b>126.58</b>

REMARK: Length Unities in Meters and Weight Unities in Metric Tons

Ship: EXAMPLE

Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.

HEELING MOMENTS OF TANKS (IMO)

<u>DESCRIPTION</u>	<u>CONTENT</u>	<u>5°</u>	<u>10°</u>	<u>15°</u>	<u>20°</u>	<u>25°</u>	<u>30°</u>	<u>35°</u>	<u>40°</u>
W02C_DB.TK. (69-77) CT.	F.WATER	3.1	6.2	9.4	12.2	13.5	14.0	14.1	13.9
B02P_SIDE TK.(77-86) PT.	W.BALLAST	.9	1.8	2.8	3.8	4.9	6.1	7.4	9.0
B02S_SIDE TK.(77-86) ST.	W.BALLAST	.9	1.8	2.8	3.8	4.9	6.1	7.4	9.0
S01C_WASTE TK.(61-67) CT.	SEWAGE	2.5	5.1	7.8	10.1	11.2	11.6	11.7	11.6

<u>DESCRIPTION</u>	<u>CONTENT</u>	<u>45°</u>	<u>50°</u>	<u>55°</u>	<u>60°</u>	<u>65°</u>	<u>70°</u>	<u>75°</u>	<u>80°</u>
W02C_DB.TK. (69-77) CT.	F.WATER	13.6	13.0	12.3	11.5	10.6	9.6	8.5	7.3
B02P_SIDE TK.(77-86) PT.	W.BALLAST	11.0	13.6	15.8	17.5	18.7	19.5	20.1	20.4
B02S_SIDE TK.(77-86) ST.	W.BALLAST	11.0	13.6	15.8	17.5	18.7	19.5	20.1	20.4
S01C_WASTE TK.(61-67) CT.	SEWAGE	11.2	10.8	10.2	9.5	8.8	7.9	7.0	6.0

Ship: EXAMPLE

Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.

Displacement: 1632.363

EQUILIBRIUM POSITION AND INITIAL STABILITY

KML	:	101.067	KMT	:	7.795
XB	:	27.108	KG	:	5.302
ZB	:	2.017	GM	:	2.493
XG	:	27.122	FSC	:	.078
XWP	:	23.899	GMC	:	2.415
YG	:	.000			
Trim	:	.237	Moulded Mean Draft	:	3.388
Design Trim	:	.000	Height of Keelbox	:	.010
Total Trim	:	.237	Total Mean Draft	:	3.398
Moulded Draft on AP:		3.506	Moulded Draft on FP:		3.269
Total Draft on AP	:	3.516	Total Draft on FP	:	3.279
Draft on Aft Marks	:	3.516	Draft on Fore Marks:		3.281

RIGHTING ARM TABLE

<u>Ø</u>	<u>KN</u>	<u>KG*SinØ</u>	<u>CORR. H.M.</u>	<u>GZ</u>	<u>DIN STA</u>
0	.000	.000	.000	.000	.000
5	.679	.462	.005	.212	.009
10	1.349	.921	.009	.419	.037
15	2.002	1.372	.014	.616	.082
20	2.561	1.813	.018	.729	.141
25	3.044	2.241	.021	.782	.207
30	3.473	2.651	.023	.799	.276
35	3.844	3.041	.025	.778	.344
40	4.135	3.408	.027	.700	.409
45	4.348	3.749	.029	.570	.464
50	4.509	4.062	.031	.416	.507
55	4.624	4.343	.033	.247	.536
60	4.687	4.592	.034	.061	.550
65	4.700	4.805	.035	-.140	.546
70	4.669	4.982	.035	-.348	.525
75	4.599	5.121	.034	-.556	.486
80	4.492	5.221	.033	-.763	.428

**REMARK:** KN Values Calculated with Constant Trim  
CORREC. H.M.: Correction due to Heeling Moments of Tanks  
Media Density= 1.025

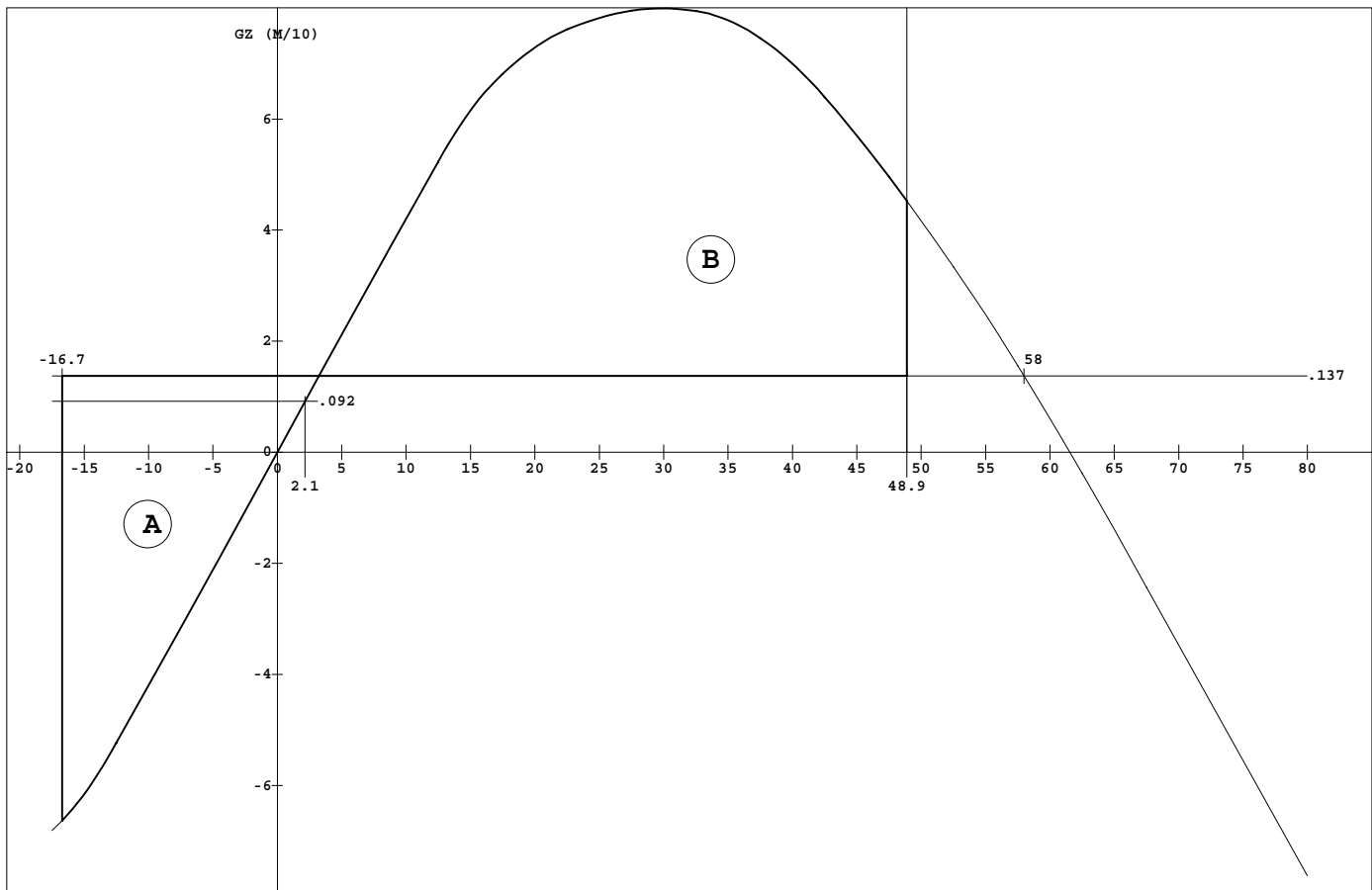
Ship: **EXAMPLE**

Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.

WEATHER CRITERION

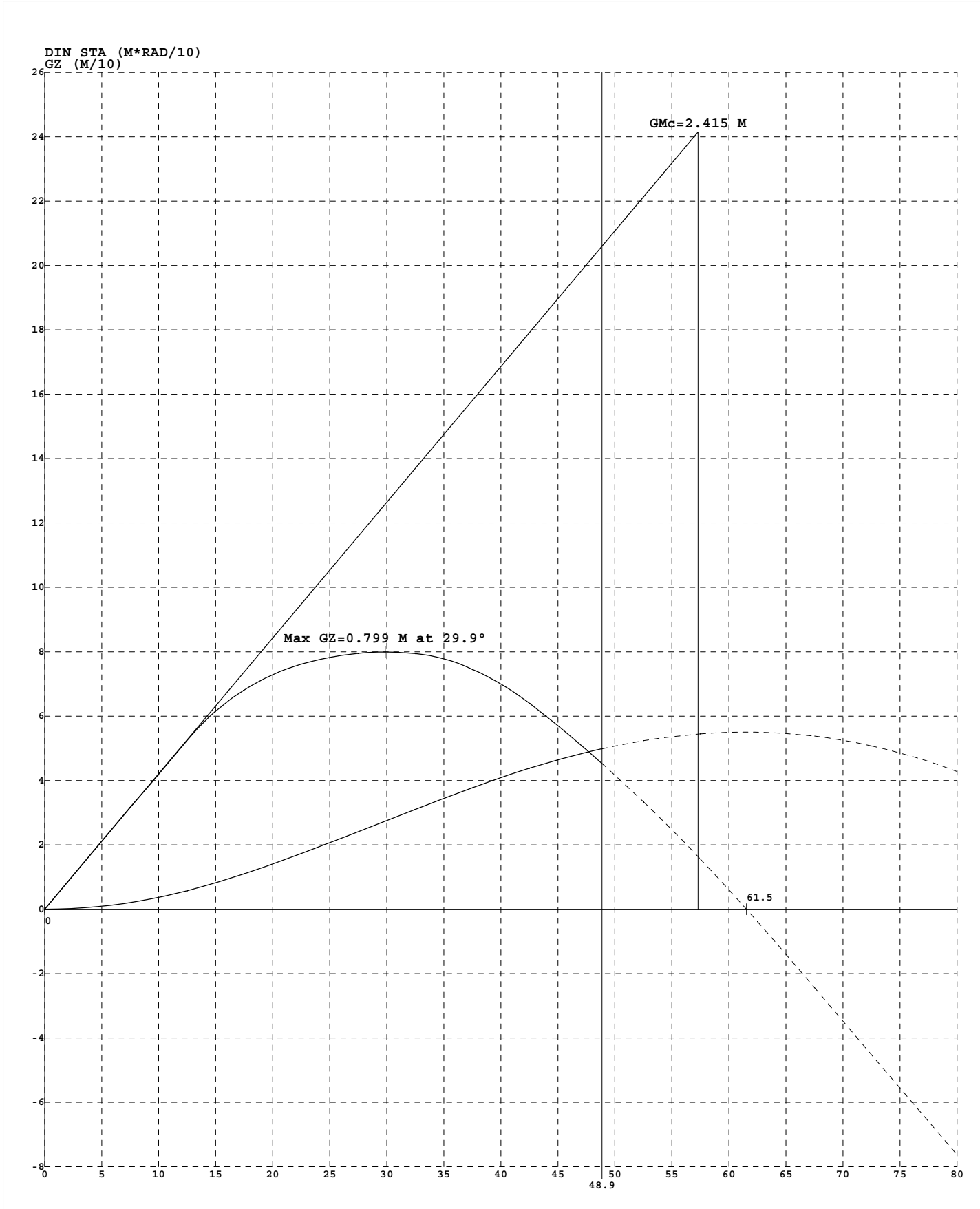
d	:	3.388	C	:	.439
B/d	:	3.926	GMc	:	2.415
X1	:	.800	T	:	7.509
Cb	:	.643	s	:	.095
X2	:	.967	OG	:	1.914
Ak	:	23.900	OG/d:	:	.565
L	:	57.108	r	:	1.069
Ak*100/(L*B)	:	.000	Øf	:	48.873
k	:	.700	Øc	:	57.997

Projected Lateral Area Exposed to the Wind	:	429.371
Height of COG of that Area From Half of Draft	:	6.773
Lever Arm Due to a Constant Wind lw1	:	.092
Lever Arm Due to a Gusty Wind lw2	:	.137
Heel Angle Due to a Constant Wind Ø0	:	2.1
Windward Rolling Angle Due to Waves Ø1	:	18.9
Lower Angle of (Øf, 50, Øc)	:	48.9
Area A (m*rad)	:	.145
Area B (m*rad)	:	.388



Ship: EXAMPLE

Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.





**Ship: EXAMPLE**

**Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.**

Displacement : 1632.363  
Moulded Mean Draft : 3.388

**CHECKING OF STABILITY CRITERIA**

<u>Concept</u>	<u>Value</u>	<u>Limit</u>	<u>Ok</u>
Initial Metacentric Height	2.415	0.150	YES
Flooding Angle	48.9		
Angle at which GZ=0	61.5		
Angle of the Maximun of GZ	29.9	25	YES
Right. Arm=.20 at 30° or more			YES
Dynamic Stability Arm at 30°	.276	0.055	YES
Dynamic Stability Arm at 40°	.409	0.090	YES
Diference Between Both	.133	0.030	YES
Area B=.388 > Area A=.145			YES

**Ship: EXAMPLE**  
**Heeling Moments of Tanks (IMO)**

**Minimum Displacement: 1173 T**

Tank	CONTENT	N	DENS.	LMX (M)	BMX (M)	HMX (M)	VOL (M3)	H.M.30°	>=1%	H.M./K
F01P_SIDE+DB.TK.(61-67) PT.	FUEL OIL	1	.850	3.600	4.183	4.816	25.046	2.21		
F01S_SIDE+DB.TK.(61-67) ST.	FUEL OIL	1	.850	3.600	4.183	4.816	25.046	2.21		
F02P_SIDE+DB.TK.(45-61) PT.	FUEL OIL	1	.850	9.600	4.250	4.887	82.077	8.04	X	190.23
F02S_SIDE+DB.TK.(45-61) ST.	FUEL OIL	1	.850	9.600	4.250	4.887	82.077	8.04	X	190.23
F03C_DB.TK.(45-61) CT.	FUEL OIL	1	.850	9.600	4.800	1.450	62.798	27.49	X	248.39
F04P_SIDE+DB.TK.(36-45) PT.	FUEL OIL	1	.850	5.400	6.650	4.999	65.010	14.30	X	221.14
F04S_SIDE+DB.TK.(36-45) ST.	FUEL OIL	1	.850	5.400	6.650	4.999	65.010	14.30	X	221.14
F05P_SIDE+DB.TK.(28-36) PT.	FUEL OIL	1	.850	4.800	4.250	4.729	36.587	3.56		
F05S_SIDE+DB.TK.(28-36) ST.	FUEL OIL	1	.850	4.800	4.250	4.729	36.587	3.56		
F07P_DEEP TK.(4-13) PT.	FUEL OIL	1	.850	5.400	1.200	3.233	17.497	.29		
F07S_DEEP TK.(4-13) ST.	FUEL OIL	1	.850	5.400	1.200	3.233	17.497	.29		
F08P_SETTLING TK.(4-10) PT.	FUEL OIL	1	.850	3.600	2.400	3.234	24.417	1.68		
F08S_SETTLING TK.(4-10) ST.	FUEL OIL	1	.850	3.600	2.400	3.234	24.417	1.68		
F06P_DAILY TK.(10-13) PT.	FUEL OIL	1	.850	1.800	2.400	3.512	14.002	.91		
F06S_DAILY TK.(10-13) ST.	FUEL OIL	1	.850	1.800	2.400	3.512	14.002	.91		
W01P_SIDE TK.(69-77) PT.	F.WATER	1	1.000	4.800	3.958	4.706	64.467	8.86	X	216.67
W01S_SIDE TK.(69-77) ST.	F.WATER	1	1.000	4.800	3.958	4.706	64.467	8.86	X	216.67
W02C_DB.TK.(69-77) CT.	F.WATER	1	1.000	4.800	4.800	1.450	28.544	14.02	X	126.64
L01P_DIRTY OIL TK.(17-21) PT.	LUB.OIL	1	.920	2.400	2.536	1.072	5.151	1.09		
L02S_SLUDGE TK.(17-21) ST.	LUB.OIL	1	.920	2.400	2.536	1.072	5.151	1.09		
B01C_FORE PEAK (86-PR) CT.	W.BALLAST	1	1.025	3.940	6.966	5.000	33.079	7.85		
B02P_SIDE TK.(77-86) PT.	W.BALLAST	1	1.025	5.400	4.062	4.641	49.187	6.06	X	142.35
B02S_SIDE TK.(77-86) ST.	W.BALLAST	1	1.025	5.400	4.062	4.641	49.187	6.06	X	142.35
B04P_SIDE TK.(PP-16) PT.	W.BALLAST	1	1.025	12.095	1.250	3.417	33.381	.61		
B04S_SIDE TK.(PP-16) ST.	W.BALLAST	1	1.025	12.095	1.250	3.417	32.160	.58		
B03C_STABILIZER TK.(16-28) CT.	W.BALLAST	1	1.025	7.200	13.300	4.546	89.678	60.23	X	554.88
S01C_WASTE TK.(61-67) CT.	SEWAGE	1	1.000	3.600	4.800	1.450	22.899	11.63	X	105.08

Ship: EXAMPLE

Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.

Longitudinal Strength

DESCRIPTION	CONTENT	WEIGHT	XG	XMIN	XMAX
LightShip		1173.21	27.430	-2.500	57.500
CREW & EFFECTS		7.00	40.800		
FORE STORE		8.00	53.400		
MIDSHIP STORE		3.00	28.800		
SMALL TK.E.ROOM		1.00	12.000		
PROVISIONS		1.20	48.000		
F01P_SIDE+DB.TK.(61-67) PT.	FUEL OIL				
F01S_SIDE+DB.TK.(61-67) ST.	FUEL OIL				
F02P_SIDE+DB.TK.(45-61) PT.	FUEL OIL				
F02S_SIDE+DB.TK.(45-61) ST.	FUEL OIL				
F03C_DB.TK.(45-61) CT.	FUEL OIL				
F04P_SIDE+DB.TK.(36-45) PT.	FUEL OIL				
F04S_SIDE+DB.TK.(36-45) ST.	FUEL OIL				
F05P_SIDE+DB.TK.(28-36) PT.	FUEL OIL				
F05S_SIDE+DB.TK.(28-36) ST.	FUEL OIL				
F07P_DEEP TK.(4-13) PT.	FUEL OIL				
F07S_DEEP TK.(4-13) ST.	FUEL OIL				
F08P_SETTLING TK.(4-10) PT.	FUEL OIL	13.00	4.292	2.400	6.000
F08S_SETTLING TK.(4-10) ST.	FUEL OIL	13.00	4.292	2.400	6.000
F06P_DAILY TK.(10-13) PT.	FUEL OIL	11.66	6.913	6.000	7.800
F06S_DAILY TK.(10-13) ST.	FUEL OIL	11.66	6.913	6.000	7.800
W01P_SIDE TK.(69-77) PT.	F.WATER				
W01S_SIDE TK.(69-77) ST.	F.WATER				
W02C_DB.TK.(69-77) CT.	F.WATER	15.75	43.729	41.400	46.200
L01P_DIRTY OIL TK.(17-21) PT.	LUB.OIL	4.26	11.476	10.200	12.600
L02S_SLUDGE TK.(17-21) ST.	LUB.OIL	4.26	11.476	10.200	12.600
B01C_FORE PEAK (86-PR) CT.	W.BALLAST	33.91	52.722	51.600	55.540
B02P_SIDE TK.(77-86) PT.	W.BALLAST	50.42	48.355	46.200	51.600
B02S_SIDE TK.(77-86) ST.	W.BALLAST	50.42	48.355	46.200	51.600
B04P_SIDE TK.(PP-16) PT.	W.BALLAST				
B04S_SIDE TK.(PP-16) ST.	W.BALLAST				
B03C_STABILIZER TK.(16-28) CT.	W.BALLAST				
S01C_WASTE TK.(61-67) CT.	SEWAGE	20.61	38.391	36.600	40.200
C.ON MAIN DECK		210.00	12.900		
<b>Displacement</b>		<b>1632.36</b>	<b>459.155</b>		

REMARK: Length Unities in Meters and Weight Unities in Metric Tons

Max. Positive Shearing Force: 214.464 T at X=13.800 M  
 Max. Negative Shearing Force: -191.723 T at X=46.200 M  
 Max. Positive Bending Moment: 2575.213 T\*M at X=31.200 M  
 Max. Negative Bending Moment: .000 T\*M at X= .000 M

Ship: EXAMPLE

Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.

Longitudinal Strength

X	WEIGHT	BUOYANCY	SHEAR FORCE	B. MOMENT
-2.400	8.502	-.841	.684	.097
-1.800	9.893	-9.014	2.210	.749
-1.200	11.759	-9.154	2.812	2.163
-.600	12.102	-9.236	4.207	4.442
.000	12.419	-9.519	5.930	7.741
.600	12.772	-10.004	7.664	12.080
1.200	13.161	-10.680	9.319	17.428
1.800	13.582	-11.527	10.803	23.695
2.400	14.028	-12.523	12.313	32.590
2.400	20.211			
3.000	20.999	-14.325	15.327	39.937
3.600	21.910	-15.489	18.830	49.453
4.200	22.747	-16.708	22.669	62.485
4.800	23.593	-17.961	26.292	77.726
5.400	24.438	-19.228	29.671	95.031
6.000	25.273	-20.496	33.545	119.170
6.000	29.363			
6.600	30.181	-21.751	37.542	138.047
7.200	30.978	-22.986	41.948	159.603
7.800	31.750	-24.193	47.909	193.952
7.800	18.251			
8.400	18.647	-25.371	47.195	215.468
9.000	19.022	-26.511	43.161	241.988
9.600	19.375	-27.616	38.668	265.880
10.200	19.705	-28.684	32.432	291.737
10.200	22.588			
10.800	23.241	-29.710	28.768	307.437
11.400	23.856	-30.696	25.155	321.849
11.500	23.956	-30.857	24.356	324.772
11.500	24.956			
12.000	25.434	-31.645	21.448	334.633
12.400	25.804	-32.027	17.740	345.979
12.400	235.804			
12.500	235.891	-32.138	27.306	349.056
12.500	234.891			
12.600	234.975	-32.286	37.494	350.930
12.600	230.786			
13.200	230.961	-33.423	117.233	391.877
13.400	231.031	-33.733	206.200	475.778
13.400	21.031			
13.800	21.181	-34.254	214.464	513.189
14.400	21.342	-35.047	206.933	633.218
15.000	21.479	-35.802	198.711	753.692
15.600	21.591	-36.519	190.118	869.066
16.200	21.680	-37.200	181.026	979.079
16.800	21.745	-23.401	172.686	1083.768
17.400	18.919	-23.664	170.578	1186.293
18.000	18.892	-24.048	168.041	1287.562
18.600	18.863	-24.408	164.924	1386.989
19.200	18.814	-24.747	161.596	1484.455
19.800	18.744	-25.064	157.992	1579.806
20.400	23.372	-25.359	154.510	1672.983
21.000	23.266	-25.633	153.008	1764.962
21.600	23.141	-25.885	151.782	1856.208
22.200	22.999	-42.093	149.059	1946.267
22.800	25.922	-42.411	138.848	2031.280
23.400	25.763	-42.695	128.605	2109.928
24.000	25.588	-42.945	118.475	2182.547

Ship: EXAMPLE

Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.

Longitudinal Strength

X	WEIGHT	BUOYANCY	SHEAR FORCE	B. MOMENT
24.600	25.396	-43.158	108.062	2248.955
25.200	25.188	-43.333	97.406	2309.006
25.800	24.965	-43.468	86.520	2362.559
26.400	24.727	-43.559	75.420	2409.484
27.000	24.475	-43.602	64.076	2449.645
27.600	29.074	-43.589	52.921	2483.015
28.200	28.791	-43.539	43.464	2511.902
28.300	28.743	-43.529	41.744	2516.911
28.300	31.743			
28.800	31.497	-43.466	35.691	2533.386
29.300	31.244	-43.389	26.698	2555.579
29.300	28.244			
29.400	28.193	-43.371	26.456	2556.100
30.000	27.881	-43.250	20.005	2565.114
30.600	27.458	-43.127	10.777	2572.970
31.200	27.022	-42.966	1.378	2575.213
31.800	26.575	-42.781	-8.189	2571.741
32.400	26.126	-42.573	-17.911	2562.458
33.000	25.679	-42.337	-27.778	2547.276
33.600	25.232	-42.074	-37.772	2526.116
34.200	24.787	-41.782	-47.877	2498.910
34.800	24.345	-41.460	-58.072	2465.599
35.400	23.909	-41.109	-68.340	2426.137
36.000	23.478	-40.723	-78.659	2380.491
36.600	23.055	-40.303	-91.592	2314.903
36.600	28.892			
37.200	28.442	-39.850	-98.460	2264.303
37.800	28.000	-39.356	-104.446	2210.110
38.400	27.564	-38.819	-111.258	2144.375
39.000	27.134	-38.243	-118.009	2074.580
39.600	26.712	-37.626	-124.673	2000.772
40.200	20.699	-36.955	-132.838	1903.334
40.200	26.297			
40.300	27.638	-36.838	-134.442	1883.167
40.300	20.638			
40.800	27.338	-36.231	-137.886	1841.848
41.300	27.042	-35.598	-144.524	1735.028
41.300	20.042			
41.400	19.984	-35.465	-144.953	1727.781
41.400	23.559			
42.000	23.158	-34.633	-150.920	1656.996
42.600	22.755	-33.732	-156.921	1575.250
43.200	22.348	-32.772	-163.505	1478.123
43.800	21.937	-31.736	-169.757	1377.194
44.400	21.516	-30.617	-175.633	1272.680
45.000	21.080	-29.416	-181.091	1164.828
45.600	20.624	-28.121	-186.090	1053.906
46.200	20.140	-26.732	-191.723	911.604
46.200	46.292			
46.800	48.251	-25.244	-185.069	812.453
47.400	45.751	-23.655	-172.408	715.201
47.500	46.520	-23.382	-169.668	694.841
47.500	45.320			
48.000	44.272	-21.965	-159.558	622.238
48.500	41.905	-20.486	-142.910	511.112
48.500	40.705			
48.600	40.214	-20.181	-142.481	508.275
49.200	37.176	-18.305	-133.921	450.159

Ship: EXAMPLE

Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.

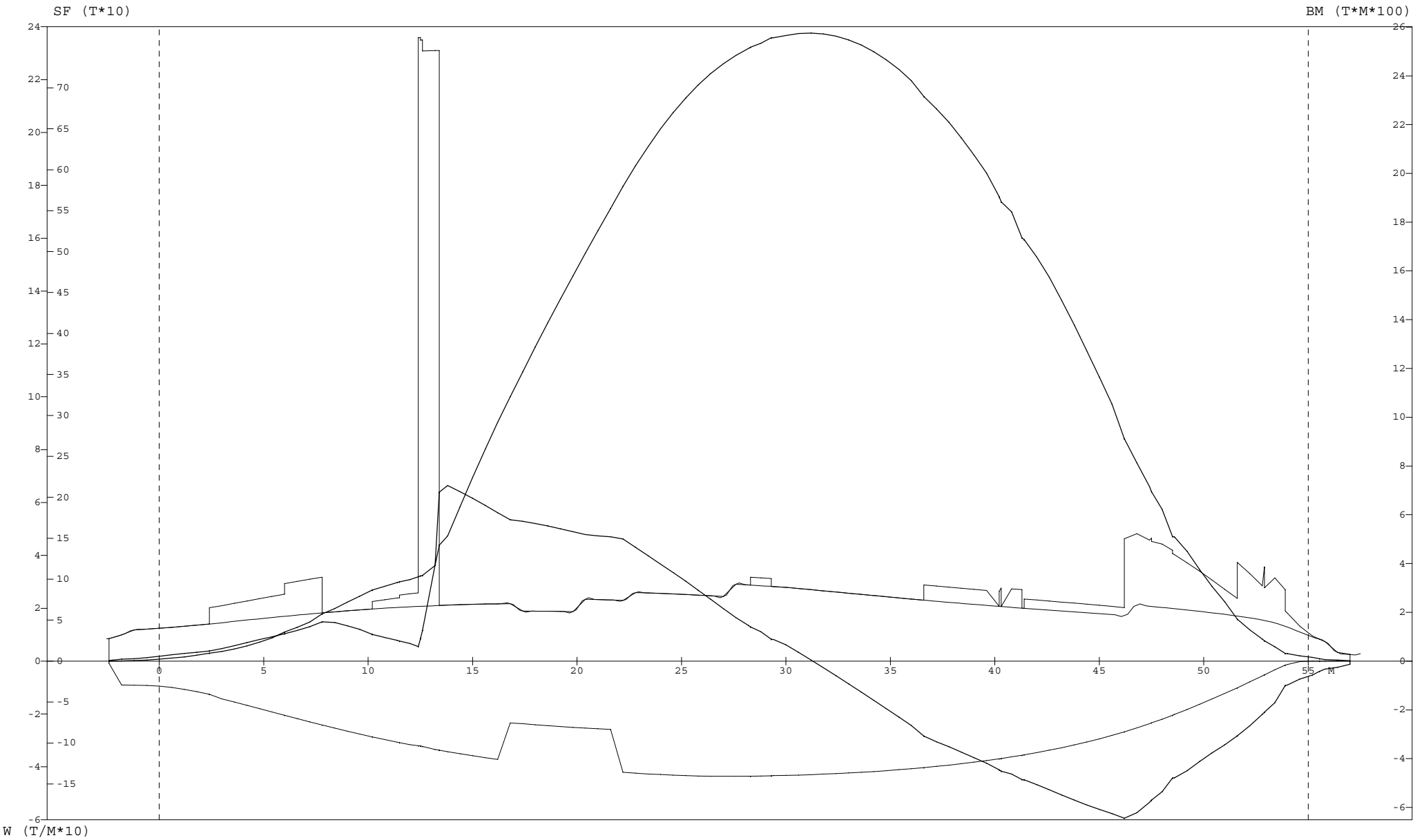
Longitudinal Strength

X	WEIGHT	BUOYANCY	SHEAR FORCE	B. MOMENT
49.800	33.967	-16.344	-122.601	374.928
50.400	30.620	-14.316	-112.031	306.153
51.000	27.172	-12.232	-102.251	243.366
51.600	23.741	-10.103	-91.142	172.092
51.600	37.379			
52.200	33.115	-7.901	-79.084	128.038
52.800	28.489	-5.604	-65.231	90.161
52.900	35.688	-5.221	-62.341	82.680
52.900	27.688			
53.400	31.502	-3.312	-50.635	58.849
53.900	26.952	-1.510	-29.762	31.670
53.900	18.952			
54.000	18.089	-1.240	-29.251	31.100
54.600	13.152	-.176	-22.070	21.194
55.200	9.513	.000	-17.250	14.853
55.540	8.308	.000	-12.561	9.370
55.540	8.303			
55.800	7.363	.000	-9.620	6.362
56.400	3.323	.000	-7.642	4.495
57.000	2.593	.000	-3.833	2.033

Cintranaval-Defcar, S.L.  
03/18/2004

Ship: test  
Longitudinal Strength  
Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.

TEST



Ship: TEST

Floodable Lengths

Margin Line Definition

<u>X</u>	<u>Z</u>
-3.628	7.923
13.200	6.924
86.626	6.924
Poligonal Line	

Load Line Definition

TA : 5.000  
TF : 5.000  
KG : 6.200

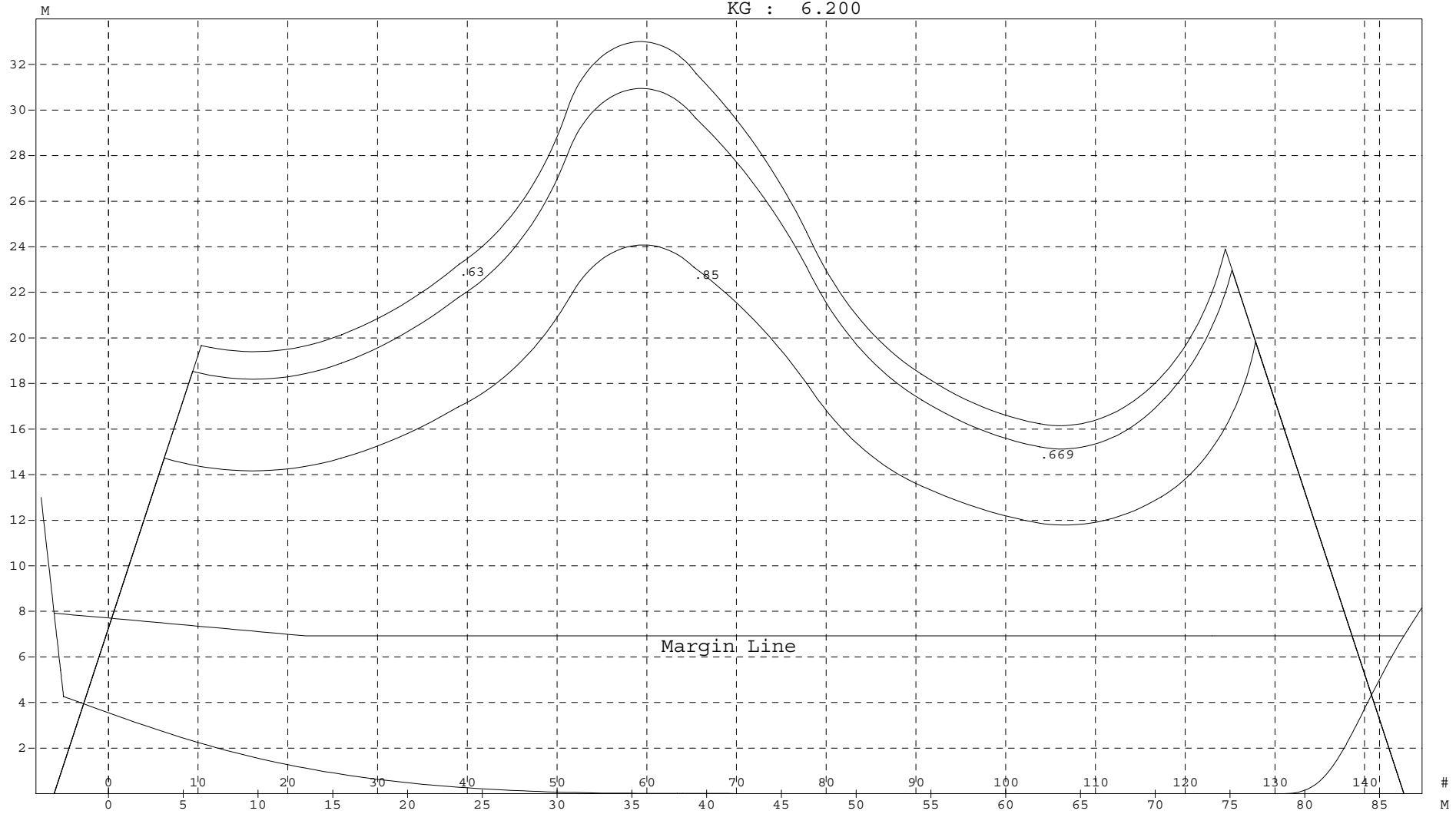
<u>Permeabilities</u>			
<u>X</u>	<u>.630</u>	<u>.850</u>	<u>.669</u>
3.734		14.724	
5.636			18.529
6.205	19.666		
11.633	19.474	14.228	18.262
19.431	21.366	15.639	20.055
27.228	25.600	18.727	24.022
35.026	32.971	24.039	30.912
42.823	28.854	21.018	27.044
50.621	20.536	15.041	19.274
58.418	16.983	12.484	15.954
66.216	16.436	11.937	15.390
74.014		15.356	20.818
74.677	23.898		
75.137			22.977
76.715		19.823	



**Ship: TEST**  
**Floodable Lengths**

**Load Line Definition**

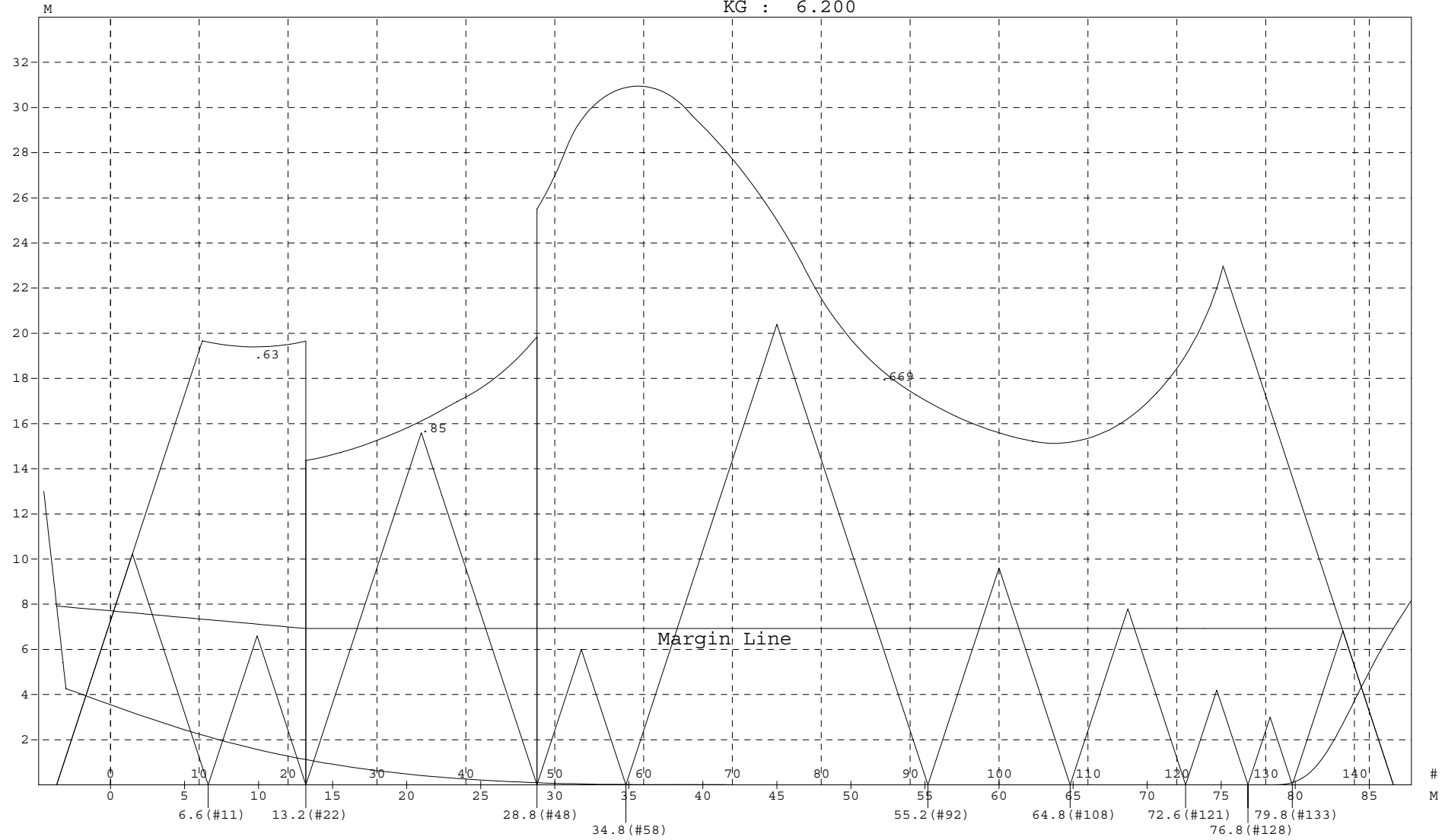
TA : 5.000  
TF : 5.000  
KG : 6.200



Ship: TEST  
Maximum Permissible Lengths

Load Line Definition

TA : 5.000  
TF : 5.000  
KG : 6.200



**Ship: EXAMPLE**  
**Table of Flooding Angles**

Trim: 0 M

<u>Angle (°)</u>	<u>Point 1(T)</u>
2	3714
4	3695
6	3676
8	3657
10	3623
12	3579
14	3528
16	3473
18	3414
20	3347
22	3266
24	3169
26	3059
28	2938
30	2810
32	2675
34	2537
36	2398
38	2263
40	2134
42	2012
44	1898
46	1792
48	1691
50	1596
52	1506
54	1419
56	1335
58	1253
60	1174
62	1099
64	1030
66	963
68	899
70	837
72	776
74	717
76	660
78	605
80	551

Point 1: WINDOW ON UPPER DK. AT FRAME 57

**Ship: EXAMPLE**  
**Table of Flooding Angles**

Trim: .5 M

<u>Angle (°)</u>	<u>Point 1(T)</u>
2	3698
4	3679
6	3661
8	3641
10	3607
12	3563
14	3512
16	3456
18	3398
20	3334
22	3259
24	3168
26	3063
28	2946
30	2820
32	2686
34	2548
36	2409
38	2273
40	2143
42	2020
44	1905
46	1797
48	1696
50	1601
52	1510
54	1423
56	1339
58	1257
60	1178
62	1104
64	1034
66	967
68	903
70	841
72	780
74	720
76	663
78	607
80	553

Point 1: WINDOW ON UPPER DK. AT FRAME 57

**Ship: EXAMPLE**  
**Table of Flooding Angles**

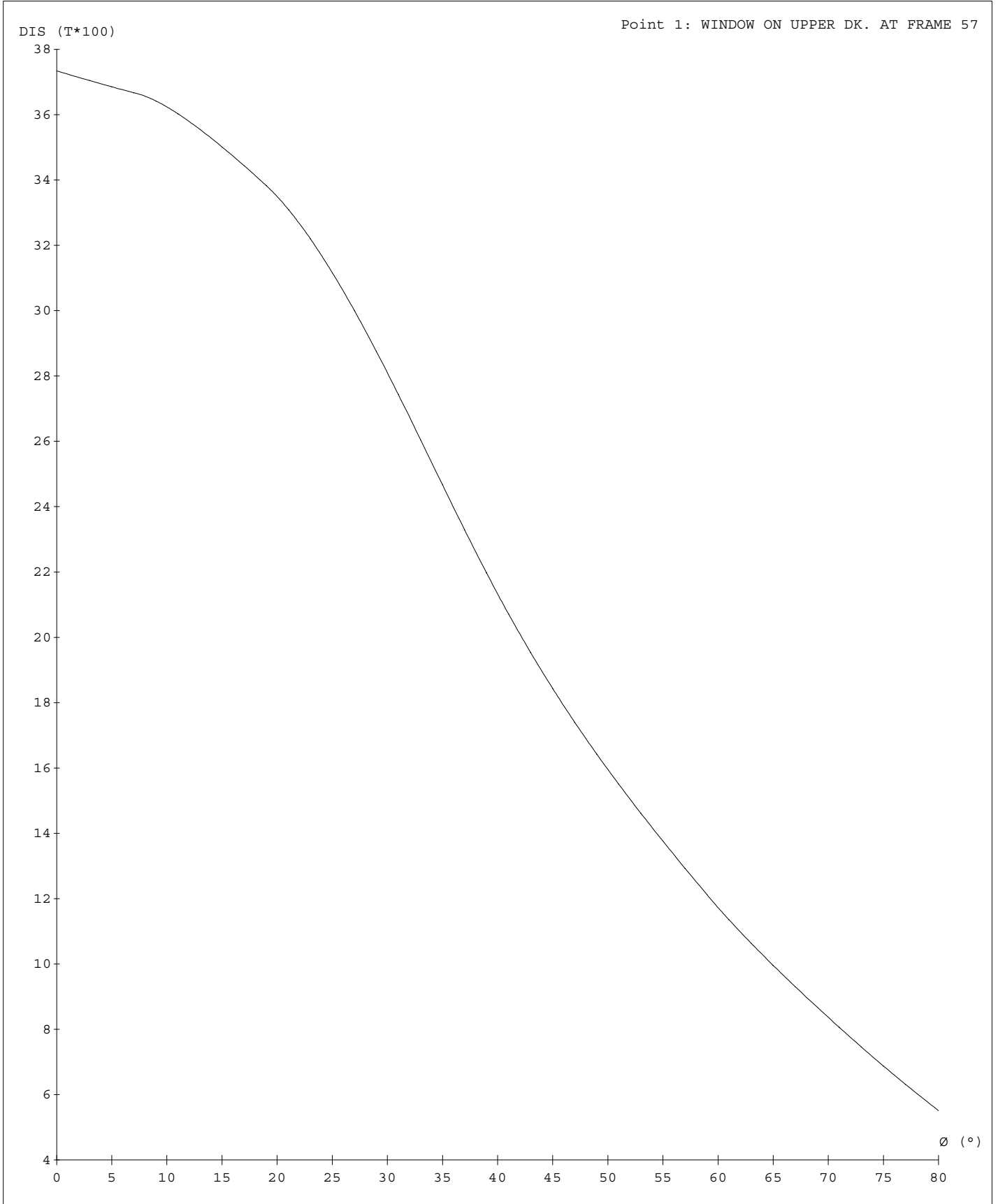
Trim: 1 M

<u>Angle (°)</u>	<u>Point 1(T)</u>
2	3683
4	3664
6	3646
8	3626
10	3591
12	3547
14	3496
16	3440
18	3382
20	3320
22	3249
24	3165
26	3065
28	2952
30	2829
32	2697
34	2559
36	2420
38	2283
40	2152
42	2028
44	1912
46	1804
48	1702
50	1606
52	1515
54	1428
56	1344
58	1262
60	1183
62	1108
64	1038
66	971
68	907
70	845
72	783
74	724
76	666
78	610
80	555

Point 1: WINDOW ON UPPER DK. AT FRAME 57

**Ship: EXAMPLE**  
**Curves of Flooding Angles**

Trim: 0 M



**Ship: EXAMPLE**

**KG Limiting Curves**

**Criteria**

- 
- 1: Initial Metacentric Height  $\geq .15$
  - 2: Angle of the Maximum of GZ  $\geq 25^\circ$
  - 3: Right. Arm=.20 at  $30^\circ$  or more
  - 4: Dynamic Stability Arm at  $30^\circ \geq .055$
  - 5: Dynamic Stability Arm at minimum of  $(40^\circ, \phi) \geq .09$
  - 6: Difference Between Both  $\geq .03$
  - 7: Weather criterion

<b>Displacement</b>	<b>1000</b>	<b>1065</b>	<b>1130</b>	<b>1195</b>	<b>1260</b>	<b>1325</b>	<b>1390</b>	<b>1455</b>	<b>1520</b>	<b>1585</b>	<b>1650</b>
<b>Trim = 0</b>											
Criterion 1	10.321	9.867	9.481	9.156	8.883	8.659	8.489	8.383	8.294	8.092	7.912
Criterion 2	5.670	5.731	5.792	5.853	5.915	5.918	5.898	5.878	5.855	5.833	5.810
Criterion 3	8.029	7.913	7.797	7.682	7.566	7.442	7.315	7.188	7.060	6.933	6.805
Criterion 4	9.100	8.901	8.701	8.502	8.302	8.123	7.951	7.779	7.616	7.456	7.295
Criterion 5	8.405	8.249	8.094	7.938	7.782	7.639	7.501	7.362	7.228	7.096	6.963
Criterion 6	7.523	7.426	7.329	7.233	7.136	7.041	6.947	6.853	6.758	6.663	6.568
Criterion 7	8.309	8.200	8.075	7.933	7.782	7.661	7.547	7.427	7.317	7.199	7.079
<b>Trim = .5</b>											
Criterion 1	10.573	10.108	9.720	9.409	9.177	9.023	8.867	8.605	8.371	8.163	7.977
Criterion 2	5.556	5.590	5.624	5.657	5.691	5.697	5.691	5.685	5.689	5.696	5.703
Criterion 3	8.126	7.994	7.862	7.730	7.598	7.461	7.322	7.184	7.046	6.910	6.773
Criterion 4	9.297	9.080	8.863	8.647	8.430	8.233	8.041	7.849	7.669	7.490	7.311
Criterion 5	8.540	8.370	8.200	8.030	7.860	7.703	7.549	7.396	7.249	7.104	6.958
Criterion 6	7.577	7.469	7.362	7.254	7.146	7.042	6.940	6.838	6.737	6.636	6.535
Criterion 7	8.547	8.424	8.281	8.122	7.954	7.814	7.679	7.533	7.398	7.259	7.118
<b>Trim = 1</b>											
Criterion 1	10.859	10.407	10.081	9.853	9.612	9.267	8.963	8.692	8.452	8.237	8.033
Criterion 2	5.407	5.424	5.442	5.460	5.477	5.494	5.511	5.528	5.556	5.586	5.617
Criterion 3	8.203	8.056	7.909	7.762	7.615	7.466	7.316	7.167	7.021	6.875	6.730
Criterion 4	9.486	9.249	9.012	8.775	8.537	8.320	8.108	7.897	7.699	7.503	7.306
Criterion 5	8.667	8.481	8.294	8.108	7.922	7.749	7.581	7.413	7.254	7.096	6.938
Criterion 6	7.619	7.501	7.383	7.265	7.147	7.035	6.925	6.815	6.708	6.601	6.494
Criterion 7	8.799	8.654	8.487	8.309	8.116	7.947	7.783	7.611	7.456	7.296	7.136

**Ship: EXAMPLE**

**KG Limiting Curves**

**Criteria**

- 1: Altura Metacéntrica Inicial  $\geq .15$
- 2: Angulo del GZ Máximo  $\geq 25^\circ$
- 3: Brazo GZ=.2 a  $30^\circ$  o más
- 4: Brazo de Est. Dinámica a  $30^\circ \geq .055$
- 5: Brazo de Est. Dinámica al menor de ( $40^\circ, \phi_f$ )  $\geq .09$
- 6: Diferencia entre ambos  $\geq .03$
- 7: Criterio Meteorológico

<b>Displacement</b>	<b>1715</b>	<b>1780</b>	<b>1845</b>	<b>1910</b>	<b>1975</b>	<b>2040</b>	<b>2105</b>	<b>2170</b>	<b>2235</b>	<b>2300</b>
<b>Trim = 0</b>										
Criterion 1	7.751	7.606	7.474	7.346	7.236	7.119	7.010	6.911	6.823	6.743
Criterion 2	5.810	5.811	5.812	5.814	5.814	5.802	5.760	5.718	5.675	5.633
Criterion 3	6.681	6.557	6.433	6.313	6.193	6.074	5.955	5.837	5.718	5.599
Criterion 4	7.143	6.991	6.840	6.695	6.551	6.409	6.271	6.133	5.995	5.857
Criterion 5	6.833	6.704	6.575	6.448	6.321	6.195	6.071	5.947	5.823	5.696
Criterion 6	6.469	6.370	6.270	6.166	6.062	5.958	5.853	5.749	5.644	5.510
Criterion 7	6.967	6.852	6.735	6.625	6.513	6.402	6.296	6.188	6.046	5.892
<b>Trim = .5</b>										
Criterion 1	7.809	7.649	7.507	7.358	7.224	7.103	6.994	6.896	6.808	6.729
Criterion 2	5.716	5.730	5.746	5.758	5.769	5.768	5.740	5.711	5.682	5.607
Criterion 3	6.641	6.509	6.379	6.254	6.129	6.005	5.884	5.763	5.643	5.522
Criterion 4	7.144	6.976	6.810	6.653	6.495	6.341	6.192	6.044	5.895	5.747
Criterion 5	6.818	6.677	6.538	6.402	6.266	6.132	6.001	5.870	5.739	5.604
Criterion 6	6.431	6.327	6.223	6.116	6.009	5.902	5.795	5.688	5.581	5.449
Criterion 7	6.988	6.859	6.725	6.601	6.474	6.349	6.230	6.076	5.915	5.763
<b>Trim = 1</b>										
Criterion 1	7.849	7.663	7.498	7.349	7.215	7.094	6.986	6.888	6.800	6.721
Criterion 2	5.644	5.669	5.696	5.717	5.737	5.746	5.723	5.695	5.643	5.574
Criterion 3	6.592	6.453	6.316	6.186	6.056	5.929	5.806	5.684	5.561	5.439
Criterion 4	7.124	6.942	6.761	6.591	6.421	6.255	6.096	5.938	5.779	5.620
Criterion 5	6.787	6.637	6.487	6.343	6.199	6.057	5.919	5.782	5.644	5.502
Criterion 6	6.386	6.278	6.170	6.061	5.951	5.842	5.732	5.623	5.514	5.383
Criterion 7	6.992	6.843	6.694	6.556	6.418	6.278	6.116	5.941	5.777	5.626

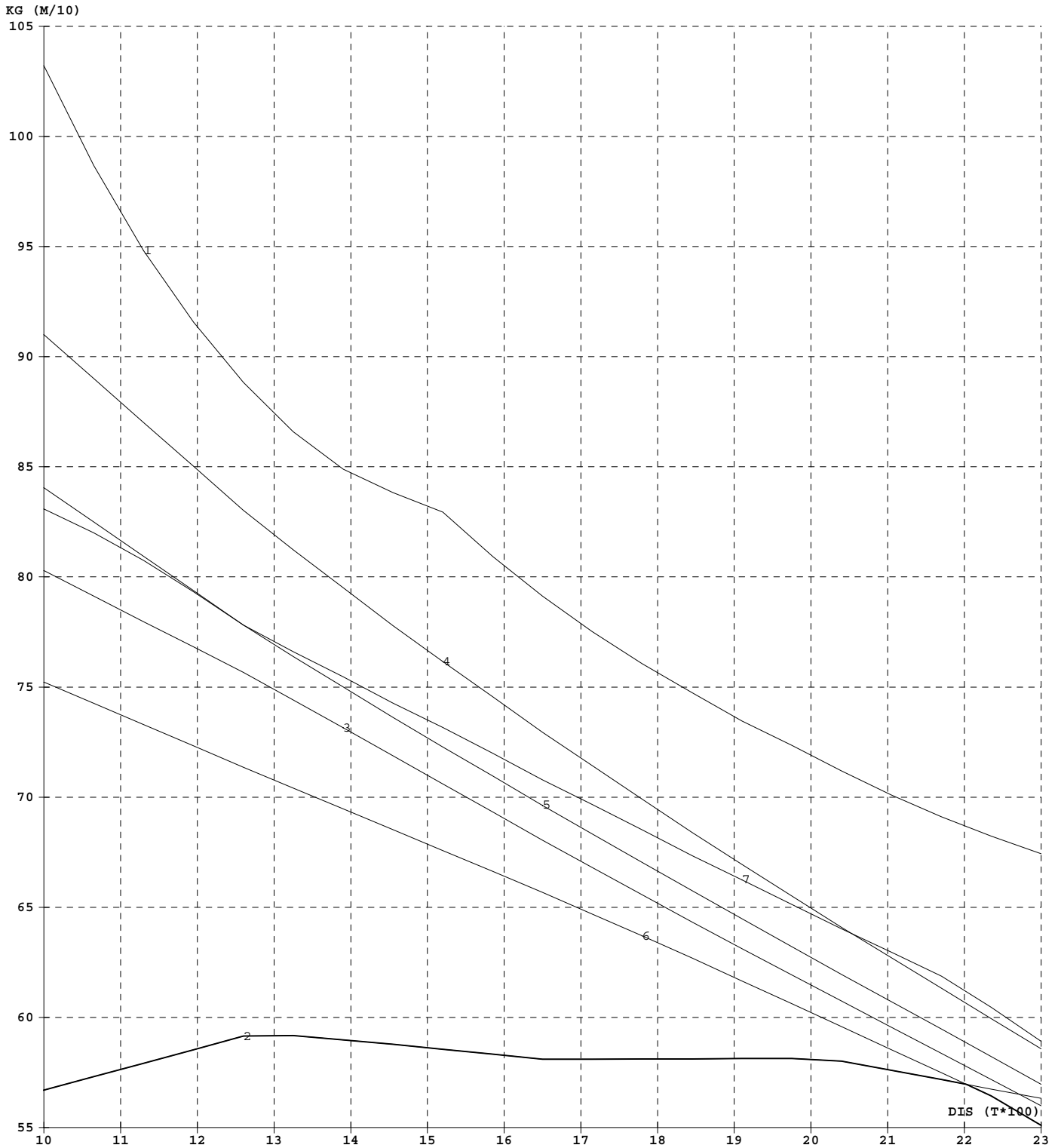


**Ship: EXAMPLE**  
**KG Limiting Curves**

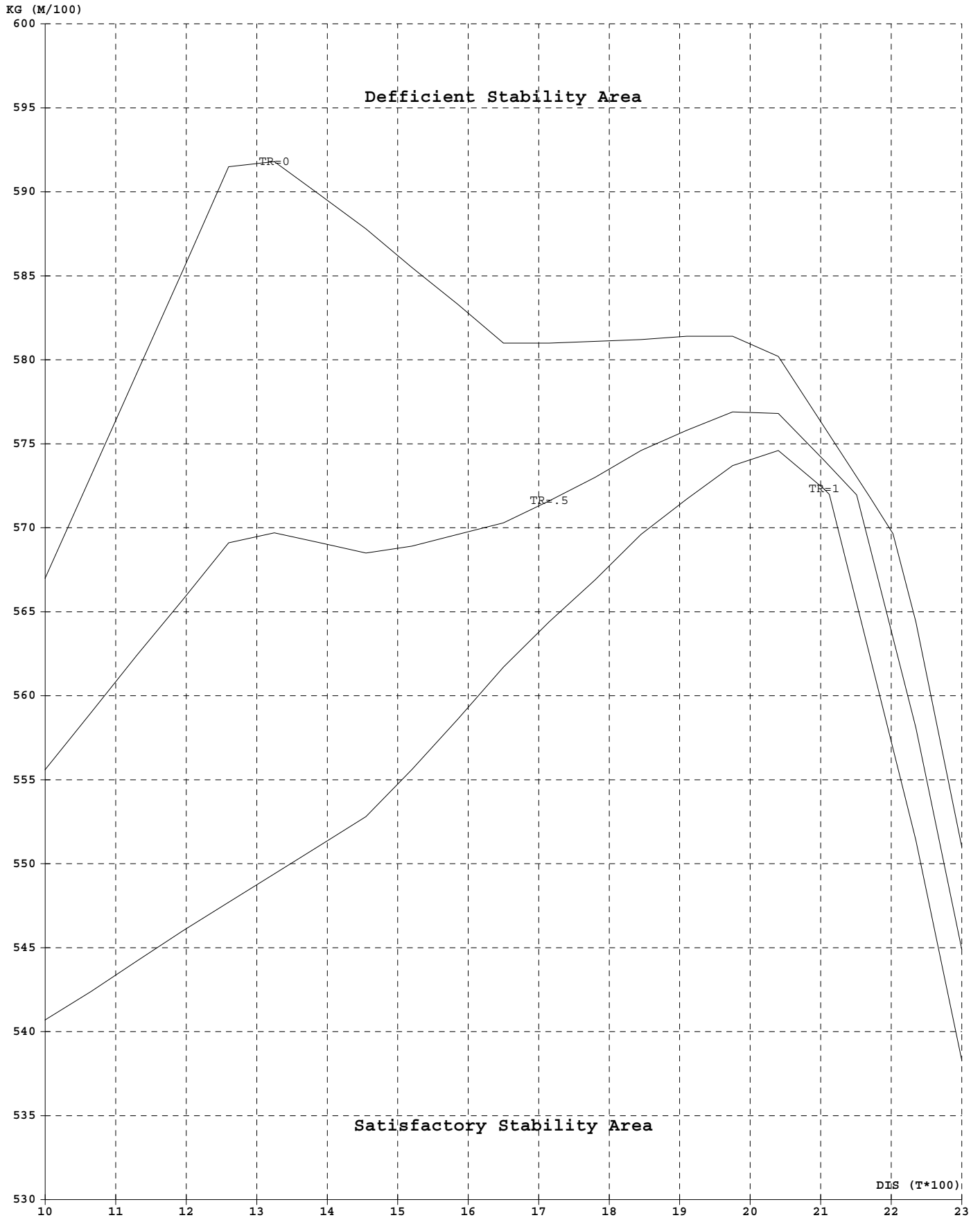
Criteria

- 1: Initial Metacentric Height  $\geq .15$
- 2: Angle of the Maximum of GZ  $\geq 25^\circ$
- 3: Right. Arm=.20 at  $30^\circ$  or more
- 4: Dynamic Stability Arm at  $30^\circ \geq .055$
- 5: Dynamic Stability Arm at minimum of  $(40^\circ, \theta_f) \geq .09$
- 6: Difference Between Both  $\geq .03$
- 7: Weather criterion

Trim: 0



Ship: EXAMPLE  
KG Limiting Curves



Ship: EXAMPLE

Damage: DAMAGE #77-86

Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.

DESCRIPTION	CONTENTS	%	WEIGHT	XG	MOM. X	YG	MOM. Y	ZG	MOM. Z	DENS.	FSI	I*D
<b>LightShip</b>			<b>1173.21</b>	<b>27.430</b>	<b>32181.1</b>	<b>.239</b>	<b>280.4</b>	<b>5.571</b>	<b>6535.9</b>			
CREW & EFFECTS			7.00	40.800	285.6	.000	.0	8.500	59.5			
FORE STORE			8.00	53.400	427.2	.000	.0	7.500	60.0			
MIDSHIP STORE			3.00	28.800	86.4	.000	.0	6.200	18.6			
SMALL TK.E.ROOM			1.00	12.000	12.0	.000	.0	3.000	3.0			
<b>Total MISCELLANEOUS</b>			<b>19.00</b>	<b>42.695</b>	<b>811.2</b>	<b>.000</b>	<b>.0</b>	<b>7.426</b>	<b>141.1</b>			
PROVISIONS			1.20	48.000	57.6	.000	.0	8.500	10.2			
<b>Total PROVISIONS</b>			<b>1.20</b>	<b>48.000</b>	<b>57.6</b>	<b>.000</b>	<b>.0</b>	<b>8.500</b>	<b>10.2</b>			
F01P_SIDE+DB.TK.(61-67) P	FUEL OIL											
F01S_SIDE+DB.TK.(61-67) S	FUEL OIL											
F02P_SIDE+DB.TK.(45-61) P	FUEL OIL											
F02S_SIDE+DB.TK.(45-61) S	FUEL OIL											
F03C_DB.TK.(45-61) CT.	FUEL OIL											
F04P_SIDE+DB.TK.(36-45) P	FUEL OIL											
F04S_SIDE+DB.TK.(36-45) S	FUEL OIL											
F05P_SIDE+DB.TK.(28-36) P	FUEL OIL											
F05S_SIDE+DB.TK.(28-36) S	FUEL OIL											
F07P_DEEP TK.(4-13) PT.	FUEL OIL											
F07S_DEEP TK.(4-13) ST.	FUEL OIL											
F08P_SETTLING TK.(4-10) P	FUEL OIL	62.6	13.00	4.292	55.8	-1.181	-15.4	3.012	39.2	.850	4.06	3.45
F08S_SETTLING TK.(4-10) S	FUEL OIL	62.6	13.00	4.292	55.8	1.181	15.4	3.012	39.2	.850	4.06	3.45
F06P_DAILY TK.(10-13) PT.	FUEL OIL	98.0	11.66	6.913	80.6	-1.190	-13.9	3.345	39.0	.850	2.03	1.73
F06S_DAILY TK.(10-13) ST.	FUEL OIL	98.0	11.66	6.913	80.6	1.190	13.9	3.345	39.0	.850	2.03	1.73
<b>Total FUEL OIL</b>		<b>10.0</b>	<b>49.33</b>	<b>5.532</b>	<b>272.9</b>	<b>.000</b>	<b>.0</b>	<b>3.169</b>	<b>156.3</b>			<b>10.35</b>
W01P_SIDE TK.(69-77) PT.	F.WATER											
W01S_SIDE TK.(69-77) ST.	F.WATER											
W02C_DB.TK.(69-77) CT.	F.WATER	55.2	15.75	43.729	688.6	.000	.0	.522	8.2	1.000	43.35	43.35
<b>Total FRESH WATER</b>		<b>10.0</b>	<b>15.75</b>	<b>43.729</b>	<b>688.6</b>	<b>.000</b>	<b>.0</b>	<b>.522</b>	<b>8.2</b>			<b>43.35</b>
L01P_DIRTY OIL TK.(17-21)	LUB.OIL	90.0	4.26	11.476	48.9	-1.223	-5.2	1.448	6.2	.920	3.20	2.94
L02S_SLUDGE TK.(17-21) ST	LUB.OIL	90.0	4.26	11.476	48.9	1.223	5.2	1.448	6.2	.920	3.20	2.94
<b>Total LUB-OIL</b>			<b>8.53</b>	<b>11.476</b>	<b>97.9</b>	<b>.000</b>	<b>.0</b>	<b>1.448</b>	<b>12.4</b>			<b>5.89</b>
B01C_FORE PEAK (86-PR) CT	W.BALLAST	100.0	33.91	52.722	1787.6	.000	.0	3.435	116.5	1.025		
B02P_SIDE TK.(77-86) PT.	W.BALLAST											
B02S_SIDE TK.(77-86) ST.	W.BALLAST	100.0	50.42	48.355	2437.9	2.919	147.2	3.240	163.4	1.025	16.82	17.24
B04P_SIDE TK.(PP-16) PT.	W.BALLAST											
B04S_SIDE TK.(PP-16) ST.	W.BALLAST											
B03C_STABILIZER TK.(16-28)	W.BALLAST											
<b>Total WATER BALLAST</b>			<b>84.32</b>	<b>50.111</b>	<b>4225.5</b>	<b>1.745</b>	<b>147.2</b>	<b>3.318</b>	<b>279.8</b>			<b>17.24</b>
S01C_WASTE TK.(61-67) CT.	SEWAGE	90.0	20.61	38.391	791.2	.000	.0	.704	14.5	1.000	32.51	32.51
<b>Total WASTE WATER</b>			<b>20.61</b>	<b>38.391</b>	<b>791.2</b>	<b>.000</b>	<b>.0</b>	<b>.704</b>	<b>14.5</b>			<b>32.51</b>
C.ON MAIN DECK			210.00	12.900	2709.0	-1.335	-280.4	6.350	1333.5			
<b>Total CARGO</b>			<b>210.00</b>	<b>12.900</b>	<b>2709.0</b>	<b>-1.335</b>	<b>-280.4</b>	<b>6.350</b>	<b>1333.5</b>			
<b>Deadweight</b>			<b>408.74</b>	<b>23.619</b>	<b>9653.9</b>	<b>-.326</b>	<b>-133.2</b>	<b>4.786</b>	<b>1956.0</b>			<b>109.34</b>
<b>LightShip</b>			<b>1173.21</b>	<b>27.430</b>	<b>32181.1</b>	<b>.239</b>	<b>280.4</b>	<b>5.571</b>	<b>6535.9</b>			
<b>Displacement</b>			<b>1581.95</b>	<b>26.445</b>	<b>41835.0</b>	<b>.093</b>	<b>147.2</b>	<b>5.368</b>	<b>8492.0</b>			<b>109.34</b>

REMARK: Length Unities in Meters and Weight Unities in Metric Tons

**Ship: EXAMPLE**

**Damage: DAMAGE #77-86**

**Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.**

HEELING MOMENTS OF TANKS (IMO)

<u>DESCRIPTION</u>	<u>CONTENT</u>	<u>5°</u>	<u>10°</u>	<u>15°</u>	<u>20°</u>	<u>25°</u>	<u>30°</u>	<u>35°</u>	<u>40°</u>
W02C_DB.TK. (69-77) CT.	F.WATER	3.1	6.2	9.4	12.2	13.5	14.0	14.1	13.9
B02S_SIDE TK.(77-86) ST.	W.BALLAST	.9	1.8	2.8	3.8	4.9	6.1	7.4	9.0
S01C_WASTE TK.(61-67) CT.	SEWAGE	2.5	5.1	7.8	10.1	11.2	11.6	11.7	11.6

<u>DESCRIPTION</u>	<u>CONTENT</u>	<u>45°</u>	<u>50°</u>	<u>55°</u>	<u>60°</u>	<u>65°</u>	<u>70°</u>	<u>75°</u>	<u>80°</u>
W02C_DB.TK. (69-77) CT.	F.WATER	13.6	13.0	12.3	11.5	10.6	9.6	8.5	7.3
B02S_SIDE TK.(77-86) ST.	W.BALLAST	11.0	13.6	15.8	17.5	18.7	19.5	20.1	20.4
S01C_WASTE TK.(61-67) CT.	SEWAGE	11.2	10.8	10.2	9.5	8.8	7.9	7.0	6.0

**Ship: EXAMPLE**

**Damage: DAMAGE #77-86**

<u>Affected Compartments</u>	<u>Permeability</u>
B02P_SIDE TK.(77-86) PT.	.95
WORKSHOP 69-86	.85

**Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.**

Intact Displacement	: 1632.363
Damaged Displacement	: 1581.946
Moulded Mean Draft	: 3.525

**EQUILIBRIUM POSITION AND INITIAL STABILITY**

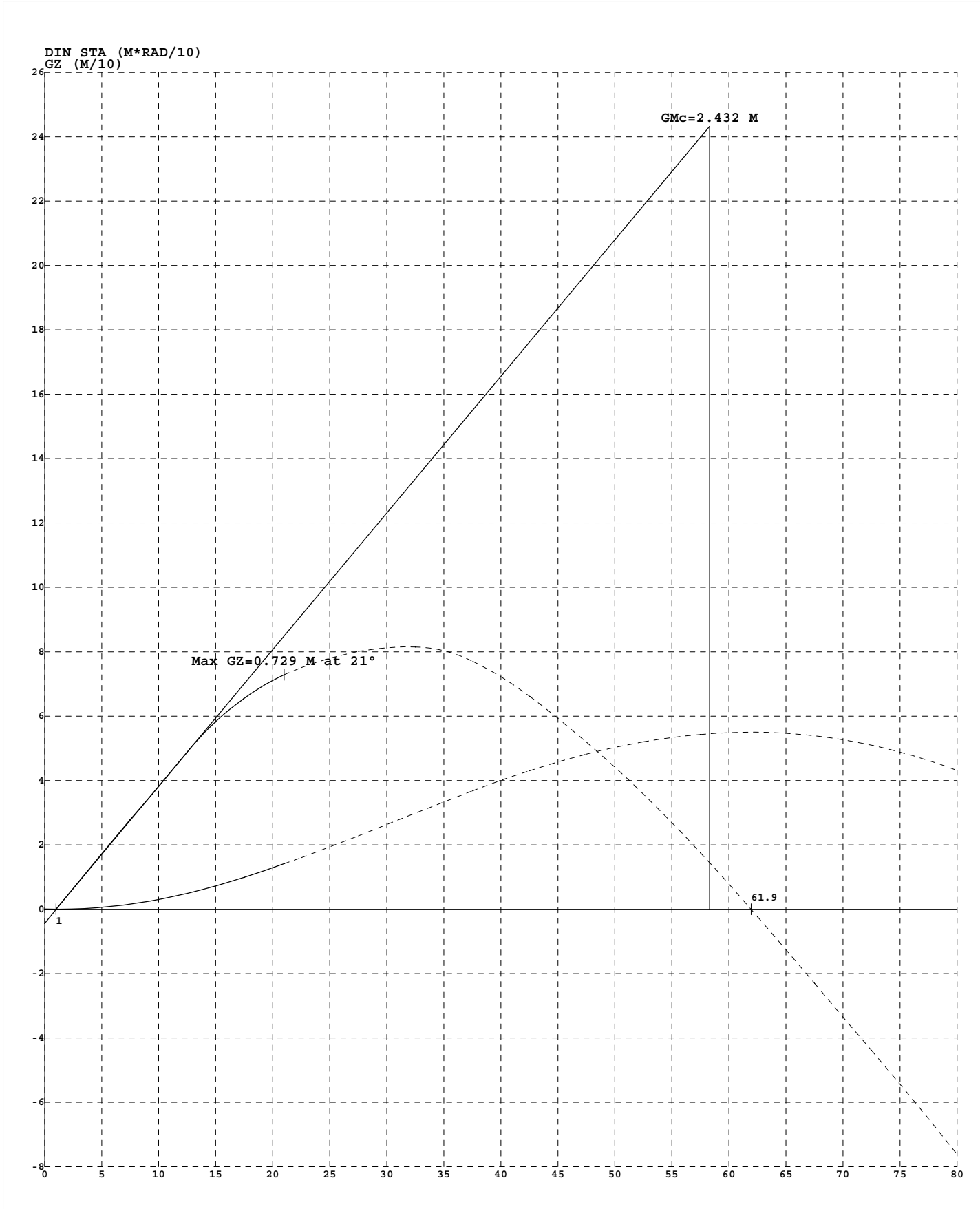
KML	: 85.042	KG	: 5.368
XB	: 26.475	FSC	: .091
ZB	: 2.059	KGc	: 5.459
XG	: 26.445	KMTi	: 7.891
XWP	: 22.127	KG*CosØi	: 5.367
YG	: .093	GMi	: 2.523
		GMci	: 2.432
Trim	: -.309	Moulded Mean Draft	: 3.525
Design Trim	: .000	Height of Keelbox	: .010
Total Trim	: -.309	Total Mean Draft	: 3.535
Moulded Draft on AP:	3.370	Moulded Draft on FP:	3.679
Total Draft on AP	: 3.380	Total Draft on FP	: 3.689
Draft on Aft Marks	: 3.380	Draft on Fore Marks:	3.688
Initial Heel Angle	: .999(SB)		

**RIGHTING ARM TABLE**

<u>Ø</u>	<u>KN</u>	<u>KG*SinØ</u>	<u>YG*CosØ</u>	<u>CORR. H.M.</u>	<u>GZ</u>	<u>DIN</u>	<u>STA</u>
0	.049	.000	.093	.000	-.044	.000	
5	.737	.468	.093	.004	.172	.006	
10	1.414	.932	.092	.008	.382	.030	
15	2.075	1.389	.090	.013	.583	.072	
20	2.651	1.836	.087	.016	.711	.129	
25	3.151	2.269	.084	.019	.780	.194	
30	3.597	2.684	.081	.020	.812	.263	
35	3.980	3.079	.076	.021	.803	.334	
40	4.266	3.450	.071	.022	.722	.400	
45	4.477	3.796	.066	.023	.593	.458	
50	4.637	4.112	.060	.024	.441	.503	
55	4.744	4.397	.053	.024	.269	.534	
60	4.798	4.649	.046	.024	.078	.549	
65	4.803	4.865	.039	.024	-.126	.547	
70	4.764	5.044	.032	.023	-.335	.527	
75	4.688	5.185	.024	.022	-.544	.488	
80	4.563	5.286	.016	.021	-.761	.431	

**REMARK:** KN Values Calculated with Constant Trim  
CORREC. H.M.: Correction due to Heeling Moments of Tanks  
Media Density= 1.025

Ship: EXAMPLE  
Damage: DAMAGE #77-86  
Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.



**Ship: EXAMPLE**

**Damage: DAMAGE #77-86**

<u>Affected Compartments</u>	<u>Permeability</u>
B02P_SIDE TK.(77-86) PT.	.95
WORKSHOP 69-86	.85

**Condition: ARRIVAL DECK CARGO. 10% CONSUMABLES.**

Displacement : 1581.946  
Moulded Mean Draft : 3.525

**CHECKING OF STABILITY CRITERIA**

<u>Concept</u>	<u>Value</u>	<u>Limit</u>	<u>Ok</u>
Range of Positive Values of GZ	60.9°	20.0°	YES
Initial Metacentric Height	2.432	0	YES
Initial Heel Angle $\theta_i$	1.0°	17.0°	YES
Dynamic Arm at $\theta_i+20^\circ=21.0^\circ$	.142	0.0175	YES
Maximun Righting Arm GZ	.729	0.100	YES

**Freeboard of the Flooding Points After the Damage**

<u>Flooding Point</u>	<u>Freeboard</u>
WINDOW ON UPPER DK. AT FRAME 57	5.395

**Ship: EXAMPLE**

**Loading Conditions**

**USED TERMINOLOGY**

AP	= Aft Perpendicular
LB	= Base Line
XG	= Length of Centre of Gravity From the AP
YG	= Beam of Centre of Gravity From the Centre Plane
ZG	= Height of Centre of Gravity From the BL
MOM. X	= Momentum of the Weight Related to the AP
MOM. Y	= Momentum of the Weight Related to the Centre Plane
MOM. Z	= Momentum of the Weight Related to the BL
FSI	= Free Surface Inertia
I*D	= Product of the Inertia by the Density of the Liquid
XB	= Length of the Centre of Buoyancy From the AP
ZB	= Height of the Centre of Buoyancy From the BL
XG	= Length of Centre of Gravity of the Ship From the AP
KG	= Height of Centre of Gravity of the Ship From the BL
XWP	= Length of the Centre of the Waterplane From the AP
KML	= Height of the Longitudinal Metacentre From the BL
KMT	= Height of the Trasverse Metacentre From the BL
GM	= Trasverse Metacentric Radius
FSC	= Free Surface Correction
GMC	= Corrected Trasverse Metacentric Radius

**WEATHER CRITERION**

L	= Length on Water Line
B	= Moulded Beam
d	= Moulded Mean Draft
Cb	= Block Coefficient
Ak	= Total Area of Bilge Keels
GMC	= Trasverse Metacentric Height Corrected
T	= Período de Balance
X1, X2	= Coefficients
k, s	= Coefficients
C, r	= Coefficients
OG	= Height Between Centre of Gravity and Water Line
Øf	= Flooding Angle
Øc	= Angle of the Second Cut of GZ with Heeling Moment lw1



**Ship: EXAMPLE**  
**Estimation of Power**

**Holtrop**

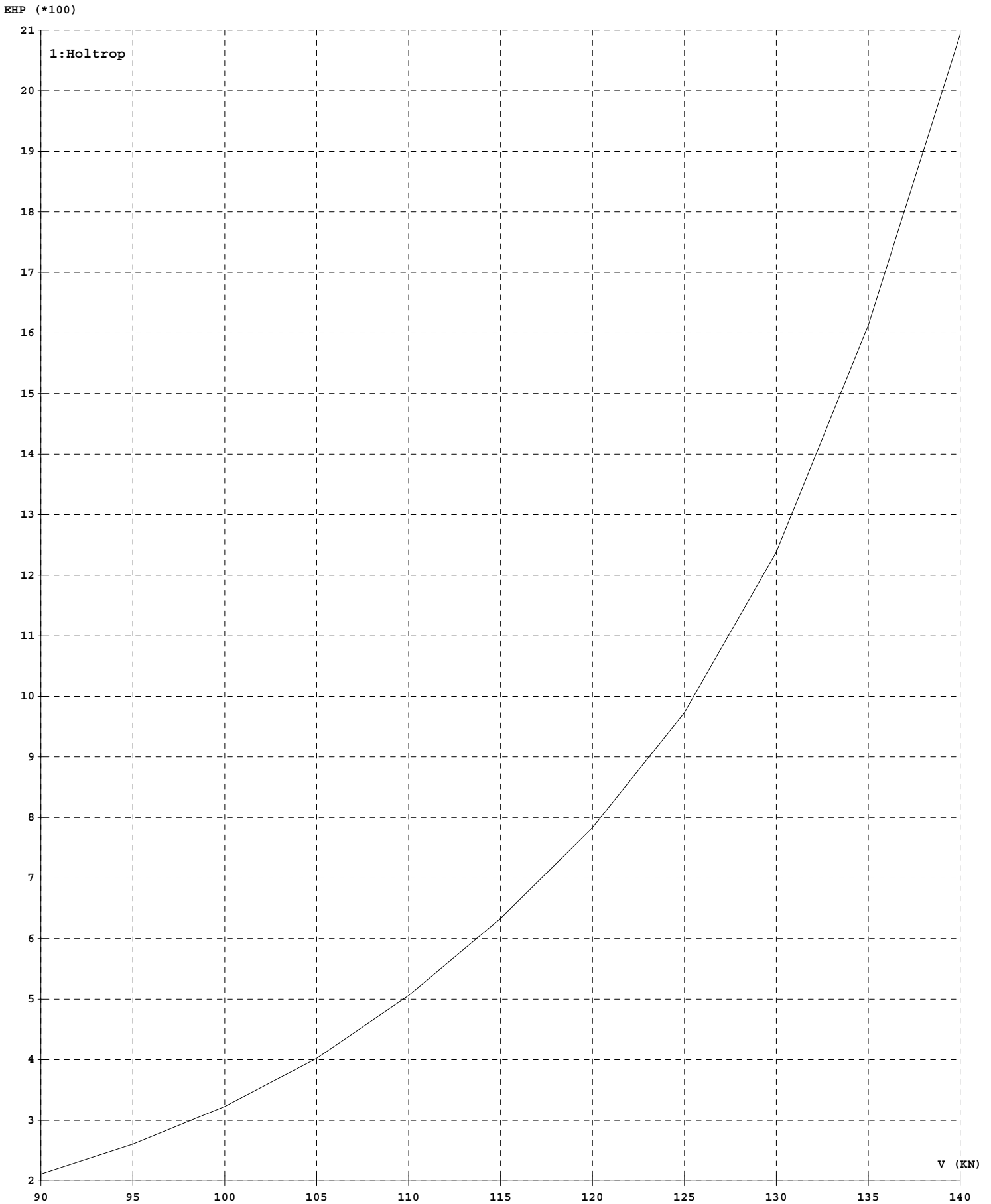
Length on Water Line : 57.500 m  
Length Between Perpendiculars: 55.000 m  
Beam on Water Line : 13.300 m  
Mean Draft : 3.800 m  
Hull Volume : 1856.504 m<sup>3</sup>  
Prismatic Coefficient : .705  
MidShip Section Coefficient : .947  
Water Line Coefficient : .917  
Longit. Centre of Buoyancy : 27.036 m  
Wetted Surface : 890.197 m<sup>2</sup>  
Half Angle of Entrance : 42.700 °  
Wetted Surface of Transom : .740 m<sup>2</sup>

**Ship: EXAMPLE**  
**Estimation of Power**

**Holtrop**

<u>V (kn)</u>	<u>Fn</u>	<u>Rt (Kg)</u>	<u>EHP</u>
9.00	.19	3429	212
9.50	.21	4004	261
10.00	.22	4708	323
10.50	.23	5591	403
11.00	.24	6710	506
11.50	.25	8034	634
12.00	.26	9520	784
12.50	.27	11352	973
13.00	.28	13894	1239
13.50	.29	17420	1613
14.00	.30	21799	2093

Ship: EXAMPLE  
Estimation of Power



**Ship: EXAMPLE**

**Inclining Test**

**Test Data**

Ship Name: TEST  
Ship Type: TPSV  
Shipyard : XXXXXXXX  
Owner : XXXXXXXX  
Location : SPAIN  
Date : XX/XX/XXXX  
Surveyor :

**Drafts**

Draft in Aft Marks Pb. : 277.600"  
Draft in Aft Marks Sb. : 7.050  
Draft in Fore Marks Pb.: 167.700"  
Draft in Fore Marks Sb.: 4.260  
Water Density : 1.026

**Weight and Pendulum(s)**

Clining Weight : 6.32  
Length of Movement: 7.54  
Position : a 43.8 m de la Ppp

**Pendulum 1**

Position : Cta Castillo Proa  
Length : 4.920  
Desviation: .1110

**Pendulum 2**

Position : Cta Castillo Popa  
Length : 5.055  
Desviation: .1140

**REMARK:** Length Unities in Meters and Weight Unities in Metric Tons  
Positive Heel Angles Towards StarBoard

Ship: EXAMPLE

Inclining Test

Weights out of LightShip

DESCRIPTION	CONTENT	N	WEIGHT	XG	ZG	DENS.	FSI
Pesos de la Prueba			6.320	43.800	13.500		
Peso Auxiliar			3.200	42.400	13.500		
Santos Botadura PR			3.250	80.200	3.500		
Santos Botadura PP			1.500	85.000	4.500		
Grupo			.300	30.500	11.000		
Cubeta PR			.200	83.700	8.250		
Cubeta PP			.200	44.500	8.000		
4 H péndulo PR			.300	83.700	9.000		
4 H Péndulo PP			.300	44.500	8.750		
6 H Pesos			.450	43.800	13.750		
3 H PP			.225	.500	11.250		
3 H PR			.225	91.200	14.200		
2 H en Máquinas			.150	38.500	6.500		
CUBA N° 22 ER		2	280.621	61.153	5.033	1.025	
CUBA N° 16 ER		2	315.241	20.649	4.902	1.025	
T.DF.C.80-98 BR		1	40.340	60.556	.888	1.000	
T.DF.C.68-80 BR		1	42.370	50.627	.612	1.000	
T.DF.MAQ.C.52-66 BR		1	35.134	40.439	.390	1.000	
T.DF.C.34-46 ER		2	58.848	27.336	.080	1.000	
T.AGUA DULCE BR	A.Dulce	2	26.538	33.327	.204	1.000	
T.DF.C.22-34 ER	Gas oil	2	32.198	19.117	.093	1.000	
T.ACEITE SUCIO	Aceite	1	12.547	39.939	.305	.920	
T REFRIG BOCINA			7.650	5.073	1.151		
T 22			15.310	35.050	8.585		
T 21			20.090	45.200	6.550		

LightShip Missing Weights

DESCRIPTION	WEIGHT	XG	ZG
PANGA	40.000	-.750	11.500
BOTE	5.000	22.500	12.750
PINTURA	2.000	48.500	9.700
HELICOPTERO	1.350	64.800	21.500
FONDA	1.000	62.100	5.055

**Ship: EXAMPLE**

**Inclining Test**

**Calculations from the Experiment Data**

Heeling Moment	:	47.653
Tang. of Pend. Desviation:		.023
Draft at Aft Marks	:	7.051
Draft at Fore Marks	:	4.260
Design Trim	:	2.200
Draft to BL at Aft Perp.	:	5.528
Draft to BL at Fore Perp.:		4.743
Mean Draft to BL	:	5.135
Trim refered to BL	:	.784

**Hydrostatic Data for These Drafts**

Volume	:	4250.938
Displ.	:	4361.462
GM	:	.484
CSL	:	.000
GMc	:	.484
ZB	:	2.842
XB	:	41.790
KMT	:	7.182

**Test Results**

XG	:	41.823
KG	:	6.697

**Ship: EXAMPLE**

**Inclining Test**

**LightShip Composition**

<b>DESCRIPTION</b>	<b>WEIGHT</b>	<b>XG</b>	<b>MOM. X</b>	<b>ZG</b>	<b>MOM. Z</b>
Ship in the Test	4361.462	41.823	182409.5	6.697	29210.3
Pesos de la Prueba	-6.320	43.800	-276.8	13.500	-85.3
Peso Auxiliar	-3.200	42.400	-135.7	13.500	-43.2
Santos Botadura PR	-3.250	80.200	-260.6	3.500	-11.4
Santos Botadura PP	-1.500	85.000	-127.5	4.500	-6.8
Grupo	-.300	30.500	-9.2	11.000	-3.3
Cubeta PR	-.200	83.700	-16.7	8.250	-1.6
Cubeta PP	-.200	44.500	-8.9	8.000	-1.6
4 H péndulo PR	-.300	83.700	-25.1	9.000	-2.7
4 H Péndulo PP	-.300	44.500	-13.4	8.750	-2.6
6 H Pesos	-.450	43.800	-19.7	13.750	-6.2
3 H PP	-.225	.500	-.1	11.250	-2.5
3 H PR	-.225	91.200	-20.5	14.200	-3.2
2 H en Máquinas	-.150	38.500	-5.8	6.500	-1.0
CUBA N° 22 ER	-280.621	61.153	-17160.8	5.033	-1412.4
CUBA N° 16 ER	-315.241	20.649	-6509.4	4.902	-1545.3
T.DF.C.80-98 BR	-40.340	60.556	-2442.8	.888	-35.8
T.DF.C.68-80 BR	-42.370	50.627	-2145.1	.612	-25.9
T.DF.MAQ.C.52-66 BR	-35.134	40.439	-1420.8	.390	-13.7
T.DF.C.34-46 ER	-58.848	27.336	-1608.7	.080	-4.7
T.AGUA DULCE BR	-26.538	33.327	-884.4	.204	-5.4
T.DF.C.22-34 ER	-32.198	19.117	-615.5	.093	-3.0
T.ACEITE SUCIO	-12.547	39.939	-501.1	.305	-3.8
T REFRIG BOCINA	-7.650	5.073	-38.8	1.151	-8.8
T 22	-15.310	35.050	-536.6	8.585	-131.4
T 21	-20.090	45.200	-908.1	6.550	-131.6
PANGA	40.000	-.750	-30.0	11.500	460.0
BOTE	5.000	22.500	112.5	12.750	63.8
PINTURA	2.000	48.500	97.0	9.700	19.4
HELICOPTERO	1.350	64.800	87.5	21.500	29.0
FONDA	1.000	62.100	62.1	5.055	5.1
<b>LightShip</b>	<b>3507.305</b>	<b>41.926</b>	<b>147046.5</b>	<b>7.497</b>	<b>26294.2</b>