

I.T.U.
FACULTY OF NAVAL ARCHITECTURE AND OCEAN ENGINEERING
ATA NUTKU SHIP MODEL BASIN

Hull Geometry/Hydrostatics
Loading Condition : Loaded

Model No: 209

Model Scale : 1/25

<i>Characteristics</i>	<i>Symbol</i>	<i>Unit</i>	<i>Model</i>	<i>Ship</i>
Length Overall	L_{OA}	[m]	3.616	90.400
Length Between Perpendiculars	L_{BP}	[m]	3.352	83.800
Length at Waterline	L_{WL}	[m]	3.436	85.900
Submerged Length	L_{OS}	[m]	3.576	89.400
Breadth at Design Waterline	B	[m]	0.568	14.200
Draught (AP)	T_K	[m]	0.216	5.40
Draught (FP)	T_B	[m]	0.216	5.40
Draught (\otimes)	T	[m]	0.216	5.40
Displacement Volume	∇	[m ³]	0.314	4914.14
Displacement	Δ	[ton]	0.314	5036.99
Block Coefficient	C_B		0.7648	0.7648
Midship Section Coefficient	C_M		0.9895	0.9895
Prismatic Coefficient	C_P		0.7729	0.7729
Waterplane Area Coefficient	C_{WP}		0.8694	0.8694
Longitudinal Centre of Buoyancy	$LCB + fwd$ [%L]		0.0390	0.9756
Longitudinal Centre of Floatation Point	$LCF + fwd$ [%L]		-0.0929	-2.3223
Vertical Centre of Buoyancy	KB	[m]	0.1136	2.8407
Radius of Metacentre	BM	[m]	0.122	3.047
Longitudinal Radius of Metacentre	BM_L	[m]	3.97	99.37
Metasentric Height	KM	[m]	0.2355	5.8879
Longitudinal Metacentric Height	KM_L	[m]	4.088	102.21
Transverse Moment of Inertia	I_T	[m ⁴]	0.0383	14974.69
Longitudinal Moment of Inertia	I_L	[m ⁴]	1.25	488330.81
Tons per cm Immersion	T_1	[ton]	0.00068	10.604
Moment to Trim 1cm	M_{T_1}	[tonm]	0.00016	61.437
Change in Displacement due to 1m trim to Aft	W_1	[ton]	-0.00157	-24.63
Wetted Hull Surface	S_W	[m ²]	2.819	1761.91
Wetted Appendage Surface	S_T	[m ²]	0.117	73.37

OFFSETS - I

Main Hull

Half Breadth Y [m]

X [m] (from AP)	-2.075	0.000	4.190	8.380	16.760	25.140	33.520
Z [m]	TRANSOM	AP=0	1/2	1	2	3	4
0.000	0.0000	0.0000	0.0000	0.2025	2.6700	5.2725	5.9000
0.2500	0.0000	0.0000	0.0325	0.7850	3.6750	5.9450	6.4450
0.5000	0.0000	0.0000	0.1750	1.0125	4.2075	6.3275	6.7500
0.7500	0.0000	0.0000	0.3025	1.1975	4.6000	6.5550	6.9250
1.0000	0.0000	0.0000	0.4000	1.3550	4.9200	6.7050	7.0425
1.2500	0.0000	0.0000	0.4550	1.5225	5.1775	6.8050	7.1050
1.5000	0.0000	0.0000	0.4975	1.7025	5.3925	6.8750	7.1050
1.7500	0.0000	0.0000	0.5300	1.9000	5.5700	6.9125	7.1050
2.0000	0.0000	0.0000	0.5775	2.1250	5.7250	6.9300	7.1050
2.2500	0.0000	0.0000	0.6375	2.3750	5.8475	6.9400	7.1050
2.5000	0.0000	0.0000	0.7250	2.6725	5.9525	6.9500	7.1050
2.7500	0.0000	0.0000	0.9600	2.9700	6.0475	6.9575	7.1050
3.0000	0.0000	0.0000	0.9925	3.3400	6.1225	6.9650	7.1050
3.2500	0.0000	0.0000	1.1900	3.6775	6.2000	6.9725	7.1050
3.5000	0.0000	0.0000	1.4650	4.0000	6.2750	6.9800	7.1050
3.7500	0.0000	0.0000	1.8350	4.3000	6.3500	6.9875	7.1050
4.0000	0.0000	0.0000	2.3000	4.5775	6.4200	6.9950	7.1050
4.2500	0.0000	0.0000	2.8575	4.8350	6.4850	7.0025	7.1050
4.5000	0.0000	0.0000	3.4200	5.0750	6.5475	7.0100	7.1050
4.7500	0.0000	0.4075	3.9050	5.2900	6.6000	7.0175	7.1050
5.0000	0.0000	1.5525	4.2950	5.4825	6.6525	7.0250	7.1050
5.2500	0.0000	2.3950	4.6125	5.6475	6.7000	7.0325	7.1050
5.5000	0.8200	3.0150	4.8800	5.7950	6.7475	7.0375	7.1050
5.7500	2.0175	3.5200	5.1025	5.9150	6.7775	7.0425	7.1050
6.0000	2.8300	3.9375	5.2900	6.0200	6.8225	7.0500	7.1050
6.2500	3.4225	4.2875	5.4475	6.1000	6.8500	7.0550	7.1050
6.5000	3.8775	4.5825	5.5825	6.1750	6.8750	7.0600	7.1050
6.7500	4.2475	4.8400	5.7025	6.2375	6.9000	7.0650	7.1050
7.0000	4.5525	5.0525	5.8050	6.2950	6.9225	7.0700	7.1050
7.2500	4.7950	5.2350	5.9000	6.3475	6.9450	7.0750	7.1050

OFFSETS - II

Main Hull

Half Breadth Y [m]

X [m] (from AP)	41.900	50.280	58.660	67.040	75.420	79.610	83.800
Z [m]	⊗	6	7	8	9	9 1/2	FP=10
0.0000	5.9250	5.8950	5.3750	3.5875	1.2750	0.2250	0.0000
0.2500	6.4500	6.4475	6.1750	4.7025	2.2250	1.0225	0.0000
0.5000	6.7750	6.7750	6.5875	5.1725	2.6250	1.3500	0.1575
0.7500	6.9625	6.9625	6.8200	5.4750	2.8675	1.5300	0.4625
1.0000	7.0700	7.0625	6.9650	6.9425	3.0350	1.6450	0.6000
1.2500	7.1050	7.1050	7.0425	5.8525	3.1650	1.7125	0.7050
1.5000	7.1050	7.1050	7.0750	5.9750	3.2750	1.7700	0.7750
1.7500	7.1050	7.1050	7.0775	6.0725	3.3825	1.8100	0.8250
2.0000	7.1050	7.1050	7.0775	6.1500	3.4850	1.8600	0.8750
2.2500	7.1050	7.1050	7.0800	6.2075	3.5775	1.9025	0.9000
2.5000	7.1050	7.1050	7.0825	6.2625	3.6575	1.9500	0.8750
2.7500	7.1050	7.1050	7.0825	6.3075	3.7300	1.9825	0.8625
3.0000	7.1050	7.1050	7.0850	6.3525	3.8125	2.0250	0.8625
3.2500	7.1050	7.1050	7.0850	6.3825	3.8875	2.0375	0.8625
3.5000	7.1050	7.1050	7.0875	6.4200	3.9600	2.1025	0.8500
3.7500	7.1050	7.1050	7.0875	6.4500	4.0300	2.1525	0.8375
4.0000	7.1050	7.1050	7.0900	6.4750	4.1050	2.2050	0.8250
4.2500	7.1050	7.1050	7.0900	6.5000	4.1825	2.2625	0.7750
4.5000	7.1050	7.1050	7.0925	6.5250	4.2525	2.3250	0.7000
4.7500	7.1050	7.1050	7.0925	6.5500	4.3300	2.4000	0.6000
5.0000	7.1050	7.1050	7.0925	6.5700	4.4075	2.4875	0.5000
5.2500	7.1050	7.1050	7.0950	6.5875	4.4800	2.5825	0.3500
5.5000	7.1050	7.1050	7.0950	6.6075	4.5550	2.6925	0.0000
5.7500	7.1050	7.1050	7.0950	6.6275	4.6325	2.8000	0.0000
6.0000	7.1050	7.1050	7.0975	6.6475	4.7125	2.9225	0.1375
6.2500	7.1050	7.1050	7.0975	6.6650	4.7875	3.0425	0.2750
6.5000	7.1050	7.1050	7.0975	6.6825	4.8675	3.1575	0.4350
6.7500	7.1050	7.1050	7.1000	6.7025	4.9500	3.2750	0.6150
7.0000	7.1050	7.1050	7.1000	6.7250	5.0300	3.4000	0.8375
7.2500	7.1050	7.1050	7.1000	6.7400	5.1075	3.5200	1.0625

OFFSETS - III

Bulbous Bow

Half Breadth Y [m]

X [m] (from AP)	84.6875	85.5750	86.4625
Z [m]	A	B	C
0.0000	0.0000	0.0000	0.0000
0.2500	0.0000	0.0000	0.0000
0.5000	0.0000	0.0000	0.0000
0.7500	0.0000	0.0000	0.0000
1.0000	0.4750	0.0000	0.0000
1.2500	0.6300	0.3125	0.0000
1.5000	0.7250	0.5900	0.0000
1.7500	0.7775	0.6875	0.0000
2.0000	0.8000	0.7275	0.3500
2.2500	0.8125	0.7500	0.5200
2.5000	0.8250	0.7750	0.6000
2.7500	0.8325	0.7950	0.6500
3.0000	0.8400	0.8000	0.6750
3.2500	0.8500	0.7925	0.7000
3.5000	0.8200	0.7825	0.6875
3.7500	0.7875	0.7750	0.6750
4.0000	0.7625	0.7500	0.6225
4.2500	0.7250	0.7050	0.5500
4.5000	0.7000	0.6275	0.4450
4.7500	0.6500	0.5375	0.3500
5.0000	0.5450	0.4000	0.2625
5.2500	0.4025	0.1750	0.0000
5.5000	0.2250	0.0000	0.0000
5.7500	0.0000	0.0000	0.0000
6.0000	0.0000	0.0000	0.0000
6.2500	0.0000	0.0000	0.0000
6.5000	0.0000	0.0000	0.0000
6.7500	0.0000	0.0000	0.0000
7.0000	0.0000	0.0000	0.0000
7.2500	0.0000	0.0000	0.0000

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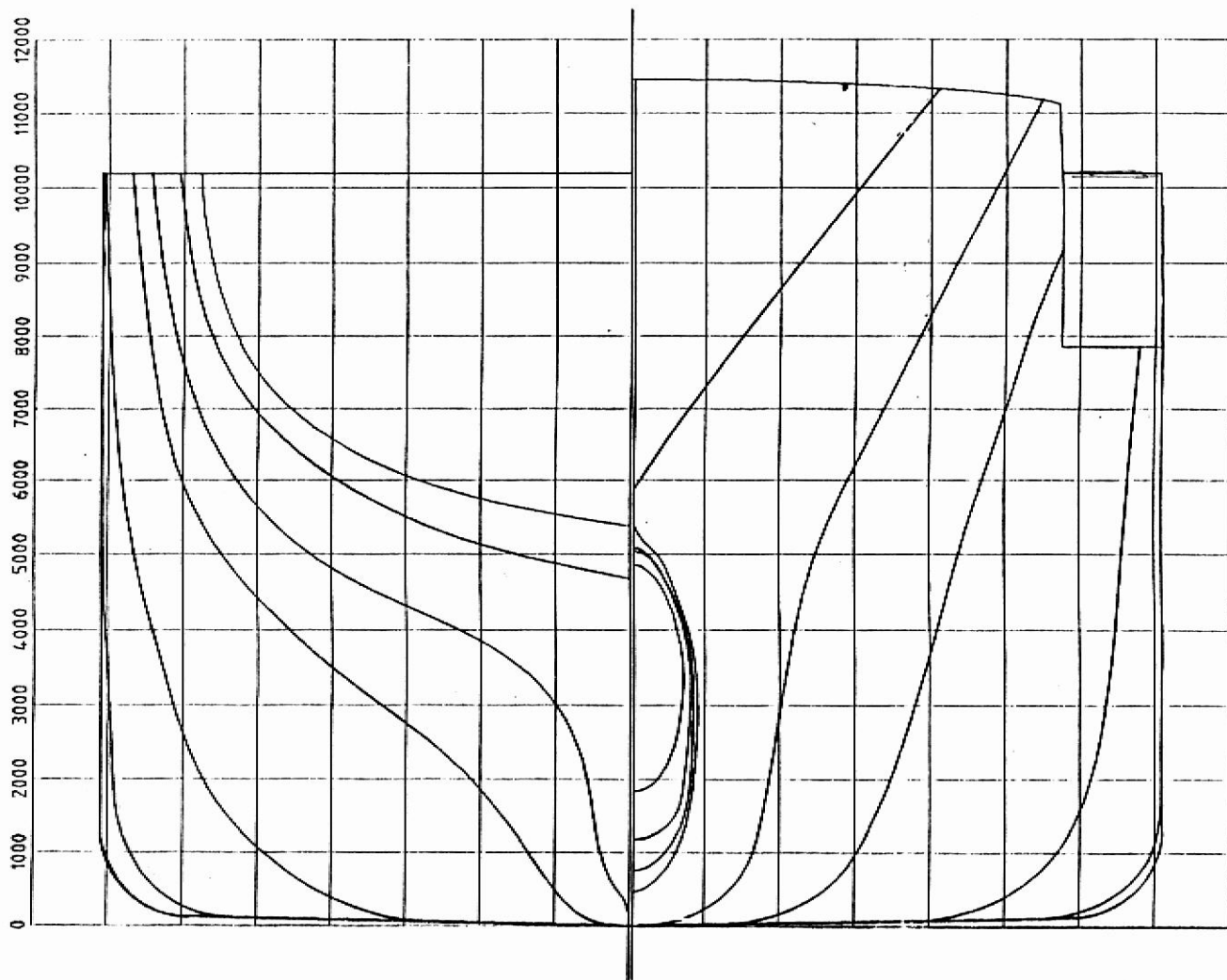


Figure 3.2. Body Plan (YZ plane section lines - Scale : 1/100)

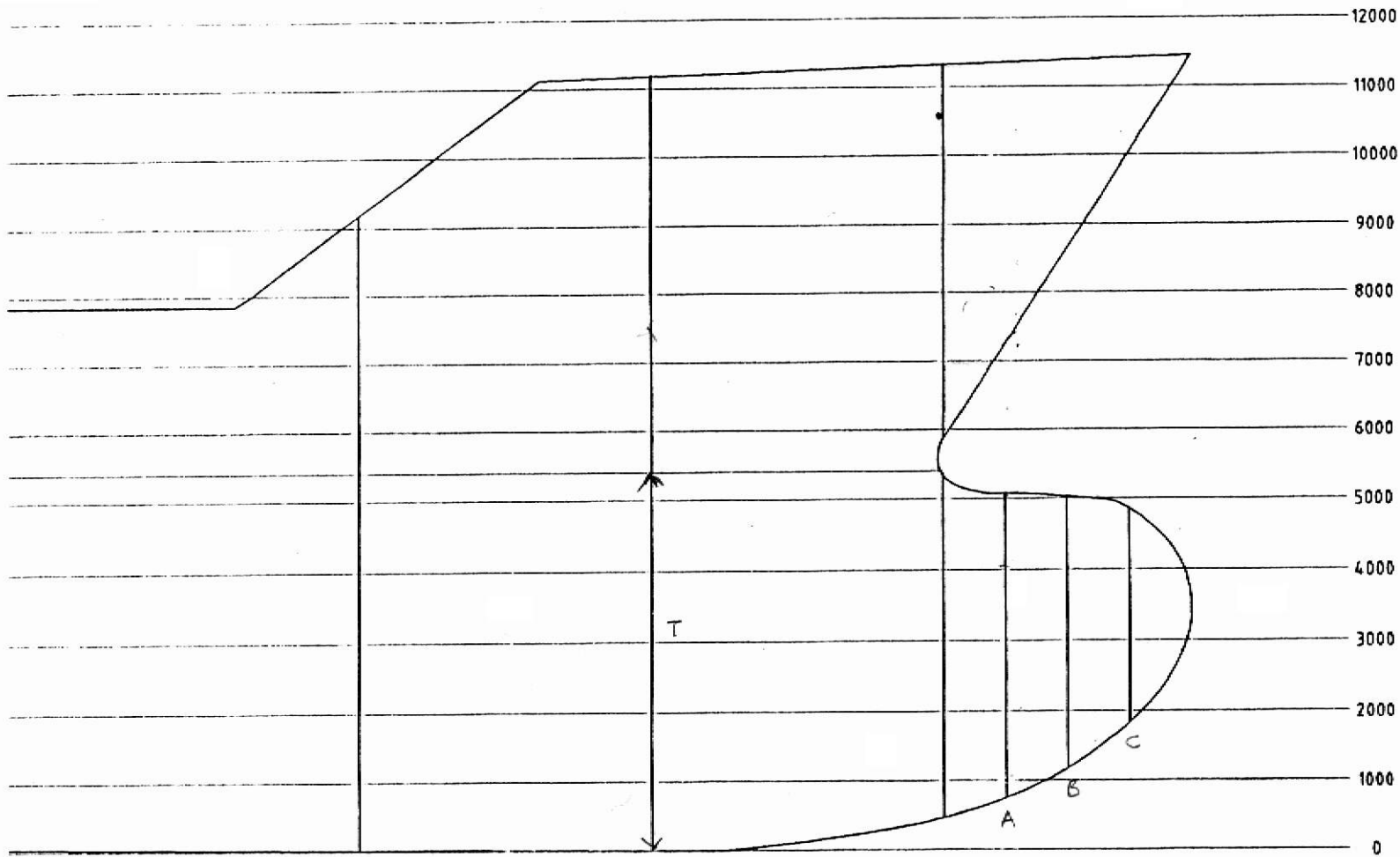


Figure 3.3. Profile Plan. (XZ plane intersection (FORE) - Scale : 1/100)

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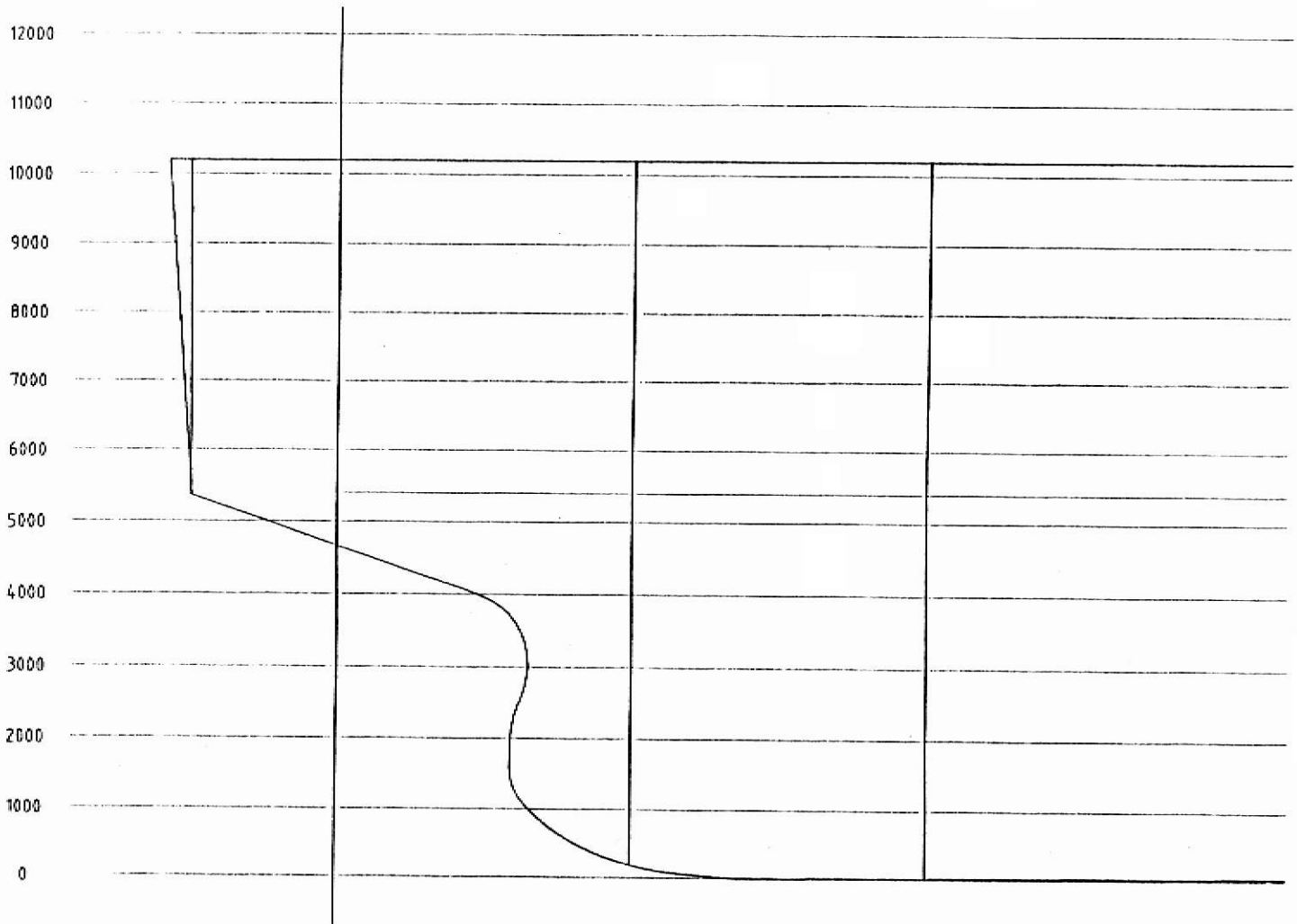


Figure 3.4. Profile Plan. (XZ plane intersection (AFT)) - Scale : 1/100)