PETROBRAS NETHERLANDS B.V.	Drawing	Nr.:	I-DE-3010.56-9310-942-XJM-051
	Client: UN – BC / ATP - MRL	Sheet:	1 of 284
	Job: MARLIM FIELD DEVELOPMENT		
	Area: FPSO UNIT – P-47		
	Title: Trim and Stability Booklet		
ultratec projemar	Doc. Nr.: PP747-NA-1D10-110		
	Contract Nr: 899.2.007.02-4		
	Technical Resp.:	CREA Nr.:	
	File Nr.: I-DE-3010.56-9310-942-XJM-051_E_P001.doc		

Revision Index

Rev.	Description and / or Revised Sheets
0	For PNBV comments
A	PNBV and LRS comments included (ADP-0364 and CRS RIO 0341000/P-47/032)
B	PNBV and LRS comments included (ADP-0850 and stat/comp 1-3 untl)
C	LRS comments included (stat/1-701AC)
D	LRS comments included (stat/1-701AC)
E	LRS comments included (OGL/KLM/0500025) - Final revision

	Rev. 0	Rev. A	Rev. B	Rev. C	Rev. D	Rev. E	Rev. F	Rev. G
Date	25-Apr-03	07-Jul-03	02-Aug-04	29-Dec-04	12-Apr-05	03-Aug-05		
Design	PROJEMAR	PROJEMAR	PROJEMAR	PROJEMAR	PROJEMAR	PROJEMAR		
Execution	Cristiane	Eleandro	Eleandro	Cristiane	Gattulli	Cristiane		
Check	Portella	Portella	Cristiane	Portella	Portella	Portella		
Approval	Cristiane	Cristiane	Cristiane	Cristiane	Cristiane	Cristiane		

THE INFORMATION CONTAINED IN THIS DOCUMENT IS PETROBRAS PROPERTY AND MAY NOT BE USED FOR PURPOSES OTHER THAN THOSE SPECIFICALLY INDICATED HEREIN
THIS FORM IS PART OF STANDARD PETROBRAS N-381 REVISION F ENGLISH ANNEX A SHEET 01/08

CONTENTS

1. INTRODUCTION 4
2. MAIN CHARACTERISTICS 4
3. CONVERSIONS 5
3.1. Units Conversion Table 5
3.2. Relations between Weight and Volume 5
4. SYMBOLS 6
5. CAPACITIES 7
5.1. Tanks Capacities 9
5.1.1. Cargo Oil Tanks 9
5.1.2. Water Ballast Tanks 16
5.1.3. Diesel Oil Tanks 19
5.1.4. Fresh Water Tanks 21
5.1.5. Lubricating Oil Tank 22
5.1.6. Miscellaneous Tanks 22
5.2. Resume 24
6. HYDROSTATIC PROPERTIES 29
6.1. Symbols 29
6.2. Hydrostatic Properties 30
6.3. Hull Form Coefficients 63
7. CROSS CURVES TABLES OF STABILITY 96
7.1.General Notes 96
7.2.Cross Curves of Stability 97
7.3.Example of the use of Cross Curves Tables 103
7.4.Flooding Angles 104
8. LIGHT WEIGHT 106
8.1.Light Weight Distribution 106
8.2.Others 106
8.3 Light Weight Curve 107
9. DRAFT MARKS 108
9.1. Draft Correction Methodology 108
10. FREEBOARD MARK 109
11. TRIM AND STABILITY CALCULATION 109
12. GENERAL NOTES 112
12.1. Reference Drawings 112
12.2. General Provisions Against Capsizing and Information for the Master 112
12.3. Coordinate System 112

12.4. Sign Convention for Trim 112
12.5. Correction Due to Specific Gravity 113
12.6. Notes About Free Surface Effects 113
12.7. Notes About the Inertia Moment of the Tanks 114
12.8. Mooring and Risers loads 114
12.9. Displacement, Center of Gravity and Free Surface Correction Calculation Procedure 114
12.10. Trim and Metacentric Height Calculation Procedure 115
12.11. Maximum Allowable Shear Forces and Bending Moments in Still Waters 122
13. FLOODING AND CRITICAL POINTS DEFINITION 122
14. MAXIMUM ALLOWABLE KG CURVE 124
15. TYPICAL LOADING CONDITIONS 125

1. INTRODUCTION

The purpose of this document is to present the main expected loading conditions for the FPSO P47 as well as the intact stability verification according to the required criteria.

The FPSO P47 is the result of the conversion of an existing Floating Storage and Offloading Unit - FSO P-47 - into a Floating Production Storage and Offloading Unit to operate at Marlim Field, Campos Basin.

2. MAIN CHARACTERISTICS

The main particulars of the FPSO PETROBRAS 47 are shown below:

Name:	PETROBRAS 47
Unit Owner :	PNBV
Type of Unit:	F.P.S.O (Floating, Production, Storage and Offloading)
Construction Year:	1976
Construction Shipyard:	Hyunday Shipbuilding Heavy Industries (Ulsan – Korea)
Conversion to FSO Year	1999
Conversion Shipyard	Astilleros Españholes (Cadiz – Espanha)
Conversion to FPSO Year	2003
Conversion Constructor	ULTRATEC
Accommodations:	160
Classification	LRS ≅ OI 100 AT - Floating Production and Oil Storage Installation, South Atlantic Sea Service (Marlim Field) PPF, OIWS, LI, ICC, ≅ OMC, CCS, IGS
Nationality	Panama
Port of Registry	Panama
Official Number	19344-91-CH

DIMENSIONS:

Length Over All:	344.424 m
Length Between Perpendiculars:	329.184 m
Moulded Breadth:	51.816 m
Moulded Depth:	26.518 m
Minimum Draft:	6.00 m
Maximum Draft (Moulded Summer Draft):	20.735 m
Displacement at Moulded Summer Draft	305799 ton
Deadweight at Moulded Summer Draft	260349 ton

Note:
"Scantlings approved for minimum draft of 6m. In heavy weather conditions the forward draft should not be less than this value. If, in the opinion of the master, sea conditions are likely to cause regular slamming, then other appropriate measures such as an increase in the draft forward may also need to be taken."

3. CONVERSIONS

3.1. Units Conversion Table

Multiply by	To Convert From	To Obtain	
0.03937	mm	in	25.400
0.3937	cm	in	2.5400
3.2808	m	ft	0.3048
2.2046	kg	lbs.	0.45359
0.0009842	kg	Long ton (2240 lbs.)	1016.047
0.9842	metric tons (i.e. t. 1000 kg)	Long ton (2240 lbs.)	1.016
2.4998	ton per cm (of immersion)	Long ton per in (of immersion)	0.4000
8.2014	Long ton x cm	Long ton x in	0.122
187.9767	rd x m	ft x degree	0.0053
	To Obtain	**To Convert From**	**Multiply by**

3.2. Relations between Weight and Volume

1000 mm^3		= 1 cm^3
1 cm^3 of fresh water	(density 1.000)	= 1 g
1000 cm^3 of fresh water	(density 1.000)	= 1 kg (1000 g)
1 m^3 of fresh water	(density 1.000)	= 1 t (1000 kg)
1 m^3 of salt water	(density 1.025)	= 1.025 t
1 t of salt water	(density 1.025)	= 0.975 m^3
1 m^3		= 35.316 ft^3
1 ft^3		= 0.0283 m^3
1 barrel		= 0.158988 m^3

4. SYMBOLS

GGo - Reduction of GMT due to free surface effect

GM - Initial metacentric height

GMo - Initial metacentric height corrected for the free surface effect

GZ - Righting arm

Hc - Correspondent draft (LCF Draft)

Hr - Draught at after perpendicular

Hv - Draught at fore perpendicular

LCB - Longitudinal position of the center of buoyancy in relation to the midship section (positive aft)

LCF - Longitudinal position of the center of fluctuation in relation to the midship section (positive aft)

Lcg - Longitudinal position of the center of gravity of the condition in relation to the midship section (positive aft)

Tcg - Transversal position of the center of gravity of the weight in relation to the center line (positive at portside)

Vcg - Vertical position of the center of gravity of the weight in relation to moulded base line

KGo - Vertical position of the center of gravity of the condition corrected for the free surface effect

KMT - Vertical position of the transversal metacenter in relation to the moulded base line

KN - Cross curve ordinate (m)

Lpp - Length between perpendiculars

MTcm - Moment to trim 1 cm

T - Trim between perpendiculars, where T= HR - HV

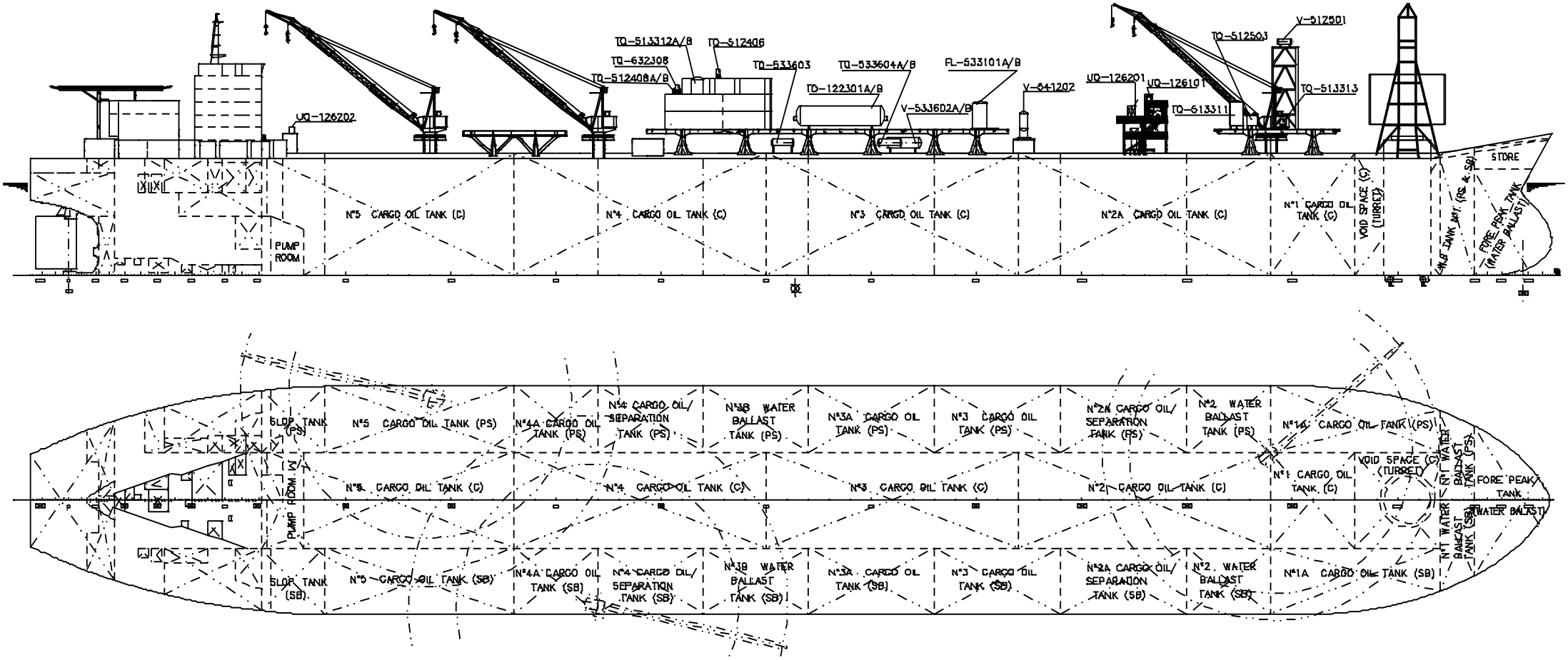
γ - Density

Δ - Displacement

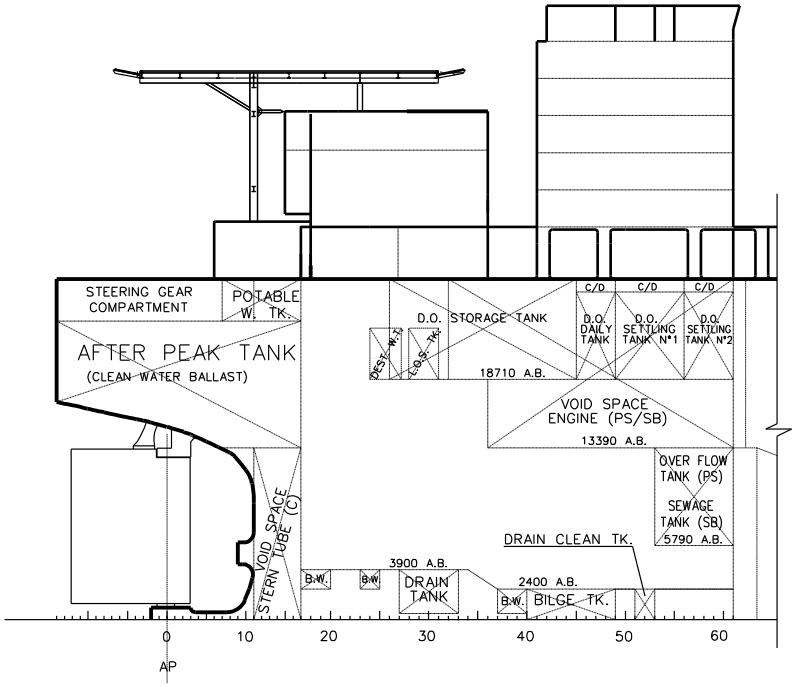
θ - Inclination angle (degrees)

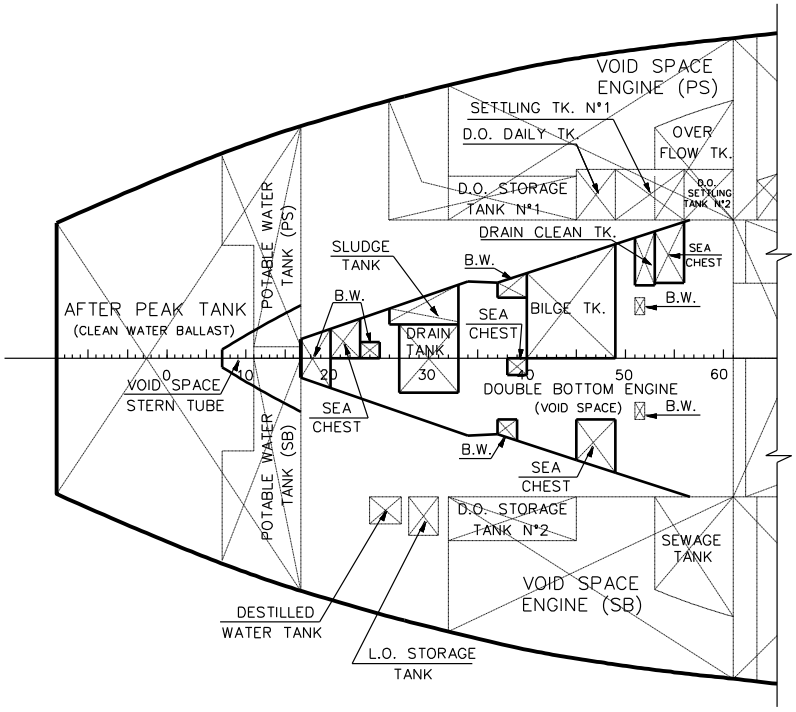
5. CAPACITIES

Plan Showing Cargo Tanks and Other Tanks



Plan Showing Other Tanks





5.1. Tanks Capacities

5.1.1. Cargo Oil Tanks

Cargo Oil Tank No.1.C (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	561.0	516.2	117.22f	0.00	0.69	14526
10.00%	1122.1	1032.3	117.22f	0.00	1.38	14526
20.00%	2244.1	2064.6	117.22f	0.00	2.75	14526
30.00%	3366.2	3096.9	117.22f	0.00	4.13	14526
40.00%	4488.2	4129.2	117.22f	0.00	5.51	14526
50.00%	5610.3	5161.5	117.22f	0.00	6.88	14526
60.00%	6732.3	6193.8	117.22f	0.00	8.26	14526
70.00%	7854.4	7226.1	117.22f	0.00	9.63	14526
80.00%	8976.5	8258.4	117.22f	0.00	11.01	14526
90.00%	10098.5	9290.7	117.22f	0.00	12.39	14526
95.00%	10659.5	9806.9	117.22f	0.00	13.08	14526
98.00%	10996.2	10116.5	117.22f	0.00	13.49	14526
100.00%	11220.6	10323.0	117.22f	0.00	13.76	

Cargo Oil Tank No.2.C (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	1682.9	1548.3	79.14f	0.00	0.69	43575
10.00%	3365.8	3096.6	79.14f	0.00	1.38	43575
20.00%	6731.7	6193.2	79.14f	0.00	2.75	43575
30.00%	10097.5	9289.8	79.14f	0.00	4.13	43575
40.00%	13463.3	12386.4	79.14f	0.00	5.51	43575
50.00%	16829.2	15483.0	79.14f	0.00	6.88	43575
60.00%	20195.0	18579.5	79.14f	0.00	8.26	43575
70.00%	23560.8	21676.1	79.14f	0.00	9.63	43575
80.00%	26926.7	24772.7	79.14f	0.00	11.01	43575
90.00%	30292.5	27869.3	79.14f	0.00	12.39	43575
95.00%	31975.4	29417.6	79.14f	0.00	13.08	43575
98.00%	32985.2	30346.6	79.14f	0.00	13.49	43575
100.00%	33658.3	30965.9	79.14f	0.00	13.76	

Cargo Oil Tank No.3.C (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	1682.9	1548.3	22.02f	0.00	0.69	43574
10.00%	3365.8	3096.6	22.02f	0.00	1.38	43574
20.00%	6731.6	6193.2	22.02f	0.00	2.75	43574
30.00%	10097.5	9289.7	22.02f	0.00	4.13	43574
40.00%	13463.3	12386.3	22.02f	0.00	5.51	43574
50.00%	16829.1	15482.9	22.02f	0.00	6.88	43574
60.00%	20194.9	18579.4	22.02f	0.00	8.26	43574
70.00%	23560.7	21676.0	22.02f	0.00	9.63	43574
80.00%	26926.5	24772.6	22.02f	0.00	11.01	43574
90.00%	30292.4	27869.2	22.02f	0.00	12.39	43574
95.00%	31975.3	29417.5	22.02f	0.00	13.08	43574
98.00%	32985.0	30346.4	22.02f	0.00	13.49	43574
100.00%	33658.2	30965.7	22.02f	0.00	13.76	

Cargo Oil Tank No.4.C (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	1682.9	1548.3	35.10a	0.00	0.69	43575
10.00%	3365.8	3096.6	35.10a	0.00	1.38	43575
20.00%	6731.7	6193.2	35.10a	0.00	2.75	43575
30.00%	10097.5	9289.8	35.10a	0.00	4.13	43575
40.00%	13463.3	12386.4	35.10a	0.00	5.51	43575
50.00%	16829.2	15482.9	35.10a	0.00	6.88	43575
60.00%	20195.0	18579.5	35.10a	0.00	8.26	43575
70.00%	23560.8	21676.1	35.10a	0.00	9.63	43575
80.00%	26926.7	24772.7	35.10a	0.00	11.01	43575
90.00%	30292.5	27869.3	35.10a	0.00	12.39	43575
95.00%	31975.4	29417.6	35.10a	0.00	13.08	43575
98.00%	32985.2	30346.6	35.10a	0.00	13.49	43575
100.00%	33658.3	30965.9	35.10a	0.00	13.76	

Cargo Oil Tank No.5.C (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	1528.1	1405.8	87.96a	0.00	0.74	36844
10.00%	3056.1	2811.7	87.96a	0.00	1.48	36844
20.00%	6112.2	5623.3	87.96a	0.00	2.96	36844
30.00%	9168.4	8435.0	87.96a	0.00	4.44	36844
40.00%	12222.0	11244.4	88.06a	0.00	5.91	39223
50.00%	15275.6	14053.7	88.57a	0.01s	7.35	42316
60.00%	18336.7	16869.9	89.00a	0.02s	8.75	42315
70.00%	21392.8	19681.5	89.31a	0.03s	10.13	42315
80.00%	24448.9	22493.2	89.53a	0.03s	11.49	42315
90.00%	27505.1	25304.8	89.71a	0.04s	12.83	42315
95.00%	29033.1	26710.7	89.79a	0.04s	13.50	42315
98.00%	29950.0	27554.2	89.83a	0.04s	13.90	42315
100.00%	30561.2	28116.5	89.85a	0.04s	14.17	

Cargo Oil Tank No.1A PS (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	622.4	572.6	121.84f	15.64p	1.13	4031
10.00%	1241.6	1142.3	122.71f	15.99p	2.01	4953
20.00%	2485.5	2286.7	123.53f	16.37p	3.58	5880
30.00%	3727.8	3429.6	123.93f	16.59p	5.03	6350
40.00%	4970.7	4573.1	124.18f	16.74p	6.42	6621
50.00%	6213.6	5716.6	124.34f	16.84p	7.78	6796
60.00%	7456.4	6860.0	124.46f	16.92p	9.12	6931
70.00%	8699.2	8003.3	124.55f	16.98p	10.44	7093
80.00%	9941.8	9146.5	124.63f	17.03p	11.75	7315
90.00%	11184.4	10289.7	124.71f	17.09p	13.05	7640
95.00%	11806.0	10861.6	124.75f	17.12p	13.69	7820
98.00%	12181.1	11206.7	124.78f	17.13p	14.08	6510
100.00%	12427.4	11433.3	124.82f	17.10p	14.33	

Cargo Oil Tank No.1A SB (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	622.4	572.6	121.84f	15.64s	1.13	4031
10.00%	1241.6	1142.3	122.71f	15.99s	2.01	4953
20.00%	2485.5	2286.7	123.53f	16.37s	3.58	5880
30.00%	3727.8	3429.6	123.93f	16.59s	5.03	6350
40.00%	4970.7	4573.1	124.18f	16.74s	6.42	6621
50.00%	6213.6	5716.6	124.34f	16.84s	7.78	6796
60.00%	7456.4	6860.0	124.46f	16.92s	9.12	6931
70.00%	8699.2	8003.3	124.55f	16.98s	10.44	7093
80.00%	9941.8	9146.5	124.63f	17.03s	11.75	7315
90.00%	11184.4	10289.7	124.71f	17.09s	13.05	7640
95.00%	11806.0	10861.6	124.75f	17.12s	13.69	7820
98.00%	12181.1	11206.7	124.78f	17.13s	14.08	6510
100.00%	12427.4	11433.3	124.82f	17.10s	14.33	

Cargo Oil / Separation Tank No.2A PS (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	578.5	532.3	74.36f	18.06p	0.71	7395
10.00%	1154.8	1062.4	74.37f	18.20p	1.39	7517
20.00%	2311.1	2126.2	74.37f	18.27p	2.75	7521
30.00%	3466.6	3189.3	74.37f	18.30p	4.10	7521
40.00%	4622.2	4252.4	74.38f	18.31p	5.45	7521
50.00%	5777.7	5315.5	74.38f	18.31p	6.79	7521
60.00%	6933.3	6378.6	74.38f	18.32p	8.14	7521
70.00%	8088.8	7441.8	74.38f	18.32p	9.49	7521
80.00%	9244.3	8504.9	74.38f	18.33p	10.84	7521
90.00%	10399.9	9568.0	74.38f	18.33p	12.19	7521
95.00%	10977.7	10099.5	74.38f	18.33p	12.86	7521
98.00%	11322.7	10417.0	74.38f	18.33p	13.26	6993
100.00%	11555.4	10631.1	74.38f	18.28p	13.54	

Cargo Oil / Separation Tank No.2A SB (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	578.5	532.3	74.36f	18.06s	0.71	7395
10.00%	1154.8	1062.4	74.37f	18.20s	1.39	7517
20.00%	2311.1	2126.2	74.37f	18.27s	2.75	7521
30.00%	3466.6	3189.3	74.37f	18.30s	4.10	7521
40.00%	4622.2	4252.4	74.38f	18.31s	5.45	7521
50.00%	5777.7	5315.5	74.38f	18.31s	6.79	7521
60.00%	6933.3	6378.6	74.38f	18.32s	8.14	7521
70.00%	8088.8	7441.8	74.38f	18.32s	9.49	7521
80.00%	9244.3	8504.9	74.38f	18.33s	10.84	7521
90.00%	10399.9	9568.0	74.38f	18.33s	12.19	7521
95.00%	10977.7	10099.5	74.38f	18.33s	12.86	7521
98.00%	11322.7	10417.0	74.38f	18.33s	13.26	6993
100.00%	11555.4	10631.1	74.38f	18.28s	13.54	

Cargo Oil Tank No.3 PS (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.00				
5.00%	578.1	531.9	45.82f	18.07p	0.71	7414
10.00%	1155.2	1062.8	45.82f	18.20p	1.39	7521
20.00%	2311.2	2126.3	45.82f	18.27p	2.75	7521
30.00%	3466.7	3189.4	45.82f	18.30p	4.09	7521
40.00%	4622.3	4252.6	45.82f	18.31p	5.44	7521
50.00%	5777.9	5315.7	45.82f	18.32p	6.79	7521
60.00%	6933.5	6378.8	45.82f	18.32p	8.14	7521
70.00%	8089.0	7442.0	45.82f	18.32p	9.49	7521
80.00%	9244.6	8505.1	45.82f	18.33p	10.84	7521
90.00%	10400.2	9568.2	45.82f	18.33p	12.18	7521
95.00%	10978.0	10099.8	45.82f	18.33p	12.86	7521
98.00%	11323.0	10417.3	45.82f	18.33p	13.26	6993
100.00%	11555.8	10631.4	45.82f	18.28p	13.53	

Cargo Oil Tank No.3 SB (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.00				
5.00%	578.1	531.9	45.82f	18.07s	0.71	7414
10.00%	1155.2	1062.8	45.82f	18.20s	1.39	7521
20.00%	2311.2	2126.3	45.82f	18.27s	2.75	7521
30.00%	3466.7	3189.4	45.82f	18.30s	4.09	7521
40.00%	4622.3	4252.6	45.82f	18.31s	5.44	7521
50.00%	5777.9	5315.7	45.82f	18.32s	6.79	7521
60.00%	6933.5	6378.8	45.82f	18.32s	8.14	7521
70.00%	8089.0	7442.0	45.82f	18.32s	9.49	7521
80.00%	9244.6	8505.1	45.82f	18.33s	10.84	7521
90.00%	10400.2	9568.2	45.82f	18.33s	12.18	7521
95.00%	10978.0	10099.8	45.82f	18.33s	12.86	7521
98.00%	11323.0	10417.3	45.82f	18.33s	13.26	6993
100.00%	11555.8	10631.4	45.82f	18.28s	13.53	

Cargo Oil Tank No.3A PS (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.00				
5.00%	578.1	531.9	17.26f	18.07p	0.71	7414
10.00%	1155.2	1062.8	17.26f	18.20p	1.39	7521
20.00%	2311.2	2126.3	17.26f	18.27p	2.75	7521
30.00%	3466.7	3189.4	17.26f	18.30p	4.09	7521
40.00%	4622.3	4252.6	17.26f	18.31p	5.44	7521
50.00%	5777.9	5315.7	17.26f	18.32p	6.79	7521
60.00%	6933.5	6378.8	17.26f	18.32p	8.14	7521
70.00%	8089.0	7442.0	17.26f	18.32p	9.49	7521
80.00%	9244.6	8505.1	17.26f	18.33p	10.84	7521
90.00%	10400.2	9568.2	17.26f	18.33p	12.18	7521
95.00%	10978.0	10099.8	17.26f	18.33p	12.86	7521
98.00%	11323.0	10417.3	17.26f	18.33p	13.26	6993
100.00%	11555.8	10631.4	17.26f	18.28p	13.53	

Cargo Oil Tank No.3A SB (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.00				
5.00%	578.1	531.9	17.26f	18.07s	0.71	7414
10.00%	1155.2	1062.8	17.26f	18.20s	1.39	7521
20.00%	2311.2	2126.3	17.26f	18.27s	2.75	7521
30.00%	3466.7	3189.4	17.26f	18.30s	4.09	7521
40.00%	4622.3	4252.6	17.26f	18.31s	5.44	7521
50.00%	5777.9	5315.7	17.26f	18.32s	6.79	7521
60.00%	6933.5	6378.8	17.26f	18.32s	8.14	7521
70.00%	8089.0	7442.0	17.26f	18.32s	9.49	7521
80.00%	9244.6	8505.1	17.26f	18.33s	10.84	7521
90.00%	10400.2	9568.2	17.26f	18.33s	12.18	7521
95.00%	10978.0	10099.8	17.26f	18.33s	12.86	7521
98.00%	11323.0	10417.3	17.26f	18.33s	13.26	6993
100.00%	11555.8	10631.4	17.26f	18.28s	13.53	

Cargo Oil / Separation Tank No.4 PS (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	481.8	443.2	32.72a	18.07p	0.71	6179
10.00%	962.7	885.7	32.72a	18.20p	1.39	6267
20.00%	1925.9	1771.8	32.72a	18.27p	2.75	6267
30.00%	2888.8	2657.8	32.72a	18.30p	4.09	6267
40.00%	3851.8	3543.7	32.72a	18.31p	5.44	6267
50.00%	4814.7	4429.6	32.72a	18.32p	6.79	6267
60.00%	5777.7	5315.5	32.72a	18.32p	8.14	6267
70.00%	6740.6	6201.4	32.72a	18.32p	9.49	6267
80.00%	7703.6	7087.4	32.72a	18.33p	10.84	6267
90.00%	8666.5	7973.3	32.72a	18.33p	12.18	6267
95.00%	9148.0	8416.2	32.72a	18.33p	12.86	6267
98.00%	9435.5	8680.8	32.72a	18.33p	13.26	5827
100.00%	9629.5	8859.2	32.72a	18.28p	13.53	

Cargo Oil / Separation Tank No.4 SB (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	481.8	443.2	32.72a	18.07s	0.71	6179
10.00%	962.7	885.7	32.72a	18.20s	1.39	6267
20.00%	1925.9	1771.8	32.72a	18.27s	2.75	6267
30.00%	2888.8	2657.8	32.72a	18.30s	4.09	6267
40.00%	3851.8	3543.7	32.72a	18.31s	5.44	6267
50.00%	4814.7	4429.6	32.72a	18.32s	6.79	6267
60.00%	5777.7	5315.5	32.72a	18.32s	8.14	6267
70.00%	6740.6	6201.4	32.72a	18.32s	9.49	6267
80.00%	7703.6	7087.4	32.72a	18.33s	10.84	6267
90.00%	8666.5	7973.3	32.72a	18.33s	12.18	6267
95.00%	9148.0	8416.2	32.72a	18.33s	12.86	6267
98.00%	9435.5	8680.8	32.72a	18.33s	13.26	5827
100.00%	9629.5	8859.2	32.72a	18.28s	13.53	

Cargo Oil Tank No.4A PS (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	384.4	353.6	54.14a	18.07p	0.71	4929
10.00%	768.0	706.6	54.14a	18.20p	1.39	5000
20.00%	1536.5	1413.6	54.14a	18.27p	2.75	5000
30.00%	2304.8	2120.4	54.14a	18.30p	4.09	5000
40.00%	3073.0	2827.2	54.14a	18.31p	5.44	5000
50.00%	3841.3	3534.0	54.14a	18.32p	6.79	5000
60.00%	4609.6	4240.8	54.14a	18.32p	8.14	5000
70.00%	5377.8	4947.6	54.14a	18.32p	9.49	5000
80.00%	6146.9	5654.4	54.14a	18.33p	10.84	5000
90.00%	6914.3	6361.2	54.14a	18.33p	12.18	5000
95.00%	7298.5	6714.6	54.14a	18.33p	12.86	5000
98.00%	7527.9	6925.7	54.14a	18.33p	13.26	4649
100.00%	7682.6	7068.0	54.14a	18.28p	13.53	

Cargo Oil Tank No.4A SB (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	384.4	353.6	54.14a	18.07s	0.71	4929
10.00%	768.0	706.6	54.14a	18.20s	1.39	5000
20.00%	1536.5	1413.6	54.14a	18.27s	2.75	5000
30.00%	2304.8	2120.4	54.14a	18.30s	4.09	5000
40.00%	3073.0	2827.2	54.14a	18.31s	5.44	5000
50.00%	3841.3	3534.0	54.14a	18.32s	6.79	5000
60.00%	4609.6	4240.8	54.14a	18.32s	8.14	5000
70.00%	5377.8	4947.6	54.14a	18.32s	9.49	5000
80.00%	6146.9	5654.4	54.14a	18.33s	10.84	5000
90.00%	6914.3	6361.2	54.14a	18.33s	12.18	5000
95.00%	7298.5	6714.6	54.14a	18.33s	12.86	5000
98.00%	7527.9	6925.7	54.14a	18.33s	13.26	4649
100.00%	7682.6	7068.0	54.14a	18.28s	13.53	

Cargo Oil Tank No.5 PS (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	799.7	735.8	80.94a	16.34p	1.00	6101
10.00%	1596.6	1468.8	81.63a	16.62p	1.86	7117
20.00%	3194.9	2939.3	82.43a	17.00p	3.43	8584
30.00%	4791.7	4408.4	82.92a	17.25p	4.89	9383
40.00%	6389.3	5878.2	83.25a	17.42p	6.29	9912
50.00%	7987.1	7348.2	83.51a	17.55p	7.66	10308
60.00%	9584.7	8818.0	83.71a	17.65p	9.00	10602
70.00%	11182.2	10287.7	83.87a	17.73p	10.32	10823
80.00%	12779.7	11757.4	84.00a	17.80p	11.62	11005
90.00%	14377.2	13227.1	84.11a	17.86p	12.92	11118
95.00%	15177.6	13963.6	84.16a	17.88p	13.56	11157
98.00%	15654.7	14402.4	84.18a	17.89p	13.95	10328
100.00%	15974.7	14696.8	84.21a	17.85p	14.21	

Cargo Oil Tank No.5 SB (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	799.7	735.8	80.94a	16.34s	1.00	6101
10.00%	1596.6	1468.8	81.63a	16.62s	1.86	7117
20.00%	3194.9	2939.3	82.43a	17.00s	3.43	8584
30.00%	4791.7	4408.4	82.92a	17.25s	4.89	9383
40.00%	6389.3	5878.2	83.25a	17.42s	6.29	9912
50.00%	7987.1	7348.2	83.51a	17.55s	7.66	10308
60.00%	9584.7	8818.0	83.71a	17.65s	9.00	10602
70.00%	11182.2	10287.7	83.87a	17.73s	10.32	10823
80.00%	12779.7	11757.4	84.00a	17.80s	11.62	11005
90.00%	14377.2	13227.1	84.11a	17.86s	12.92	11118
95.00%	15177.6	13963.6	84.16a	17.88s	13.56	11157
98.00%	15654.7	14402.4	84.18a	17.89s	13.95	10328
100.00%	15974.7	14696.8	84.21a	17.85s	14.21	

Slop Tank PS (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	186.6	171.7	111.61a	13.11p	2.91	259
10.00%	372.9	343.1	111.88a	13.75p	4.24	504
20.00%	745.9	686.2	112.08a	14.51p	6.30	935
30.00%	1117.5	1028.1	112.19a	15.02p	8.03	1329
40.00%	1491.8	1372.5	112.42a	15.39p	9.56	1827
50.00%	1864.6	1715.4	112.61a	15.69p	10.92	2163
60.00%	2237.3	2058.4	112.75a	15.94p	12.18	2470
70.00%	2610.5	2401.7	112.85a	16.16p	13.37	2750
80.00%	2983.6	2744.9	112.93a	16.35p	14.51	3002
90.00%	3356.6	3088.1	113.00a	16.52p	15.60	3217
95.00%	3543.2	3259.7	113.03a	16.60p	16.13	3316
98.00%	3653.7	3361.4	113.05a	16.64p	16.44	2098
100.00%	3729.7	3431.3	113.06a	16.61p	16.65	

Slop Tank SB (γ = 0.920 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	186.6	171.7	111.61a	13.11s	2.91	259
10.00%	372.9	343.1	111.88a	13.75s	4.24	504
20.00%	745.9	686.2	112.08a	14.51s	6.30	935
30.00%	1117.5	1028.1	112.19a	15.02s	8.03	1329
40.00%	1491.8	1372.5	112.42a	15.39s	9.56	1827
50.00%	1864.6	1715.4	112.61a	15.69s	10.92	2163
60.00%	2237.3	2058.4	112.75a	15.94s	12.18	2470
70.00%	2610.5	2401.7	112.85a	16.16s	13.37	2750
80.00%	2983.6	2744.9	112.93a	16.35s	14.51	3002
90.00%	3356.6	3088.1	113.00a	16.52s	15.60	3217
95.00%	3543.2	3259.7	113.03a	16.60s	16.13	3316
98.00%	3653.7	3361.4	113.05a	16.64s	16.44	2098
100.00%	3729.7	3431.3	113.06a	16.61s	16.65	

5.1.2. Water Ballast Tanks

Fore Peak Tank (γ = 1.025 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	219.3	224.7	157.89f	0.00	1.51	2630
10.00%	437.4	448.3	158.42f	0.00	2.30	4289
20.00%	874.8	896.7	158.98f	0.00	3.55	6223
30.00%	1312.0	1344.8	159.27f	0.00	4.61	6975
40.00%	1749.7	1793.5	159.42f	0.00	5.61	6960
50.00%	2186.4	2241.1	159.47f	0.00	6.57	6338
60.00%	2624.5	2690.1	159.43f	0.00	7.55	5400
70.00%	3061.9	3138.4	159.31f	0.00	8.56	4450
80.00%	3497.6	3585.1	159.13f	0.00	9.65	4010
90.00%	3937.1	4035.6	158.97f	0.00	10.83	4988
95.00%	4155.4	4259.3	158.93f	0.00	11.43	6030
98.00%	4286.5	4393.7	158.91f	0.00	11.79	6756
100.00%	4374.1	4483.5	158.90f	0.00	12.03	

Water Ballast Tank No. 1 PS (γ = 1.025 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	146.2	149.9	149.57f	4.89p	1.16	1074
10.00%	291.5	298.8	149.63f	5.60p	2.01	1596
20.00%	583.7	598.3	149.67f	6.37p	3.51	2174
30.00%	875.5	897.4	149.68f	6.78p	4.88	2414
40.00%	1167.5	1196.7	149.69f	7.02p	6.19	2487
50.00%	1459.4	1495.9	149.69f	7.17p	7.48	2477
60.00%	1750.1	1793.8	149.69f	7.26p	8.74	2469
70.00%	2043.1	2094.1	149.60f	7.39p	10.06	2355
80.00%	2334.7	2393.1	149.55f	7.52p	11.44	2667
90.00%	2625.7	2691.3	149.51f	7.68p	12.83	3233
95.00%	2772.5	2841.9	149.50f	7.77p	13.53	3577
98.00%	2860.4	2931.9	149.49f	7.83p	13.95	3083
100.00%	2918.7	2991.7	149.52f	7.85p	14.23	

Water Ballast Tank No. 1 SB (γ = 1.025 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	146.2	149.9	149.57f	4.89s	1.16	1074
10.00%	291.5	298.8	149.63f	5.60s	2.01	1596
20.00%	583.7	598.3	149.67f	6.37s	3.51	2174
30.00%	875.5	897.4	149.68f	6.78s	4.88	2414
40.00%	1167.5	1196.7	149.69f	7.02s	6.19	2487
50.00%	1459.4	1495.9	149.69f	7.17s	7.48	2477
60.00%	1750.1	1793.8	149.69f	7.26s	8.74	2469
70.00%	2043.1	2094.1	149.60f	7.39s	10.06	2355
80.00%	2334.7	2393.1	149.55f	7.52s	11.44	2667
90.00%	2625.7	2691.3	149.51f	7.68s	12.83	3233
95.00%	2772.5	2841.9	149.50f	7.77s	13.53	3577
98.00%	2860.4	2931.9	149.49f	7.83s	13.95	3083
100.00%	2918.7	2991.7	149.52f	7.85s	14.23	

Water Ballast Tank No. 2 PS (γ = 1.025 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	383.7	393.3	98.00f	17.67p	0.76	4873
10.00%	766.2	785.3	98.04f	17.89p	1.46	5289
20.00%	1532.1	1570.4	98.09f	18.09p	2.84	5518
30.00%	2298.2	2355.7	98.11f	18.16p	4.19	5559
40.00%	3065.4	3142.0	98.12f	18.21p	5.54	5571
50.00%	3831.8	3927.7	98.13f	18.23p	6.89	5577
60.00%	4598.1	4713.1	98.14f	18.25p	8.24	5581
70.00%	5364.4	5498.6	98.15f	18.26p	9.58	5586
80.00%	6130.7	6284.0	98.15f	18.27p	10.92	5588
90.00%	6896.8	7069.2	98.15f	18.28p	12.26	5589
95.00%	7278.8	7460.8	98.15f	18.29p	12.93	5589
98.00%	7507.0	7694.8	98.16f	18.29p	13.33	5185
100.00%	7660.7	7852.3	98.16f	18.24p	13.60	

Water Ballast Tank No. 2 SB (γ = 1.025 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	383.7	393.3	98.00f	17.67s	0.76	4873
10.00%	766.2	785.3	98.04f	17.89s	1.46	5289
20.00%	1532.1	1570.4	98.09f	18.09s	2.84	5518
30.00%	2298.2	2355.7	98.11f	18.16s	4.19	5559
40.00%	3065.4	3142.0	98.12f	18.21s	5.54	5571
50.00%	3831.8	3927.7	98.13f	18.23s	6.89	5577
60.00%	4598.1	4713.1	98.14f	18.25s	8.24	5581
70.00%	5364.4	5498.6	98.15f	18.26s	9.58	5586
80.00%	6130.7	6284.0	98.15f	18.27s	10.92	5588
90.00%	6896.8	7069.2	98.15f	18.28s	12.26	5589
95.00%	7278.8	7460.8	98.15f	18.29s	12.93	5589
98.00%	7507.0	7694.8	98.16f	18.29s	13.33	5185
100.00%	7660.7	7852.3	98.16f	18.24s	13.60	

Water Ballast Tank No. 3B PS (γ = 1.025 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	481.8	493.8	8.92a	18.07p	0.71	6884
10.00%	962.7	986.7	8.92a	18.20p	1.39	6982
20.00%	1925.9	1974.1	8.92a	18.27p	2.75	6982
30.00%	2888.8	2961.1	8.92a	18.30p	4.09	6982
40.00%	3851.8	3948.1	8.92a	18.31p	5.44	6982
50.00%	4814.7	4935.1	8.92a	18.32p	6.79	6982
60.00%	5777.7	5922.2	8.92a	18.32p	8.14	6982
70.00%	6740.6	6909.2	8.92a	18.32p	9.49	6982
80.00%	7703.6	7896.2	8.92a	18.33p	10.84	6982
90.00%	8666.5	8883.3	8.92a	18.33p	12.18	6982
95.00%	9148.0	9376.8	8.92a	18.33p	12.86	6982
98.00%	9435.6	9671.5	8.92a	18.33p	13.26	6492
100.00%	9629.5	9870.3	8.92a	18.28p	13.53	

Water Ballast Tank No. 3B SB (γ = 1.025 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	481.8	493.8	8.92a	18.07s	0.71	6884
10.00%	962.7	986.7	8.92a	18.20s	1.39	6982
20.00%	1925.9	1974.1	8.92a	18.27s	2.75	6982
30.00%	2888.8	2961.1	8.92a	18.30s	4.09	6982
40.00%	3851.8	3948.1	8.92a	18.31s	5.44	6982
50.00%	4814.7	4935.1	8.92a	18.32s	6.79	6982
60.00%	5777.7	5922.2	8.92a	18.32s	8.14	6982
70.00%	6740.6	6909.2	8.92a	18.32s	9.49	6982
80.00%	7703.6	7896.2	8.92a	18.33s	10.84	6982
90.00%	8666.5	8883.3	8.92a	18.33s	12.18	6982
95.00%	9148.0	9376.8	8.92a	18.33s	12.86	6982
98.00%	9435.6	9671.5	8.92a	18.33s	13.26	6492
100.00%	9629.5	9870.3	8.92a	18.28s	13.53	

After Peak Tank (γ = 1.025 t/m³)

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	113.7	116.6	157.73a	0.00	14.67	873
10.00%	226.8	232.5	158.64a	0.00	15.33	1902
20.00%	453.5	464.9	159.74a	0.00	16.22	4163
30.00%	680.8	697.8	160.35a	0.00	16.88	6403
40.00%	906.8	929.5	160.73a	0.00	17.42	8695
50.00%	1134.7	1163.0	161.01a	0.00	17.91	11079
60.00%	1361.3	1395.4	161.21a	0.00	18.35	13267
70.00%	1588.1	1627.8	161.37a	0.00	18.76	15583
80.00%	1815.1	1860.5	161.50a	0.00	19.15	17930
90.00%	2042.2	2093.3	161.61a	0.00	19.51	20061
95.00%	2155.8	2209.7	161.66a	0.00	19.69	21157
98.00%	2223.9	2279.6	161.69a	0.00	19.79	21824
100.00%	2269.3	2326.1	161.71a	0.00	19.86	

5.1.3. Diesel Oil Tanks

Storage Diesel Oil Tank No. 1 (γ = 0.897 t/m³) - TAG: TQ-513301A

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	29.4	26.4	140.59a	12.78p	18.98	82
10.00%	58.9	52.8	140.67a	12.83p	19.24	100
20.00%	117.6	105.5	140.82a	12.94p	19.74	140
30.00%	176.5	158.3	140.94a	13.05p	20.22	188
40.00%	235.4	211.1	141.04a	13.15p	20.69	238
50.00%	294.2	263.9	141.13a	13.24p	21.14	290
60.00%	353.1	316.7	141.21a	13.33p	21.58	345
70.00%	412.0	369.5	141.28a	13.42p	22.02	398
80.00%	470.8	422.3	141.34a	13.50p	22.44	456
90.00%	529.7	475.1	141.40a	13.58p	22.85	511
95.00%	559.2	501.6	141.43a	13.62p	23.06	403
98.00%	576.8	517.4	141.43a	13.61p	23.18	92
100.00%	588.6	527.9	141.41a	13.59p	23.26	

Storage Diesel Oil Tank No. 2 (γ = 0.897 t/m³) - TAG: TQ-513301B

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	14.7	13.2	137.88a	12.54s	18.93	31
10.00%	29.4	26.3	137.88a	12.54s	19.15	31
20.00%	58.7	52.7	137.88a	12.54s	19.58	31
30.00%	88.1	79.0	137.88a	12.54s	20.02	31
40.00%	117.4	105.3	137.88a	12.54s	20.45	31
50.00%	146.8	131.6	137.88a	12.54s	20.89	31
60.00%	176.1	158.0	137.88a	12.54s	21.32	31
70.00%	205.5	184.3	137.88a	12.54s	21.76	31
80.00%	234.8	210.6	137.88a	12.54s	22.19	31
90.00%	264.2	237.0	137.88a	12.54s	22.63	31
95.00%	278.8	250.1	137.88a	12.54s	22.84	31
98.00%	287.6	258.0	137.88a	12.54s	22.97	31
100.00%	293.5	263.3	137.88a	12.54s	23.06	

Diesel Oil Daily Tank (γ = 0.897 t/m³) - TAG: TQ-513303

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	4.6	4.1	131.42a	12.82p	18.90	15
10.00%	9.1	8.2	131.42a	12.82p	19.09	15
20.00%	18.2	16.3	131.42a	12.82p	19.47	15
30.00%	27.3	24.5	131.42a	12.82p	19.85	15
40.00%	36.4	32.7	131.42a	12.82p	20.23	15
50.00%	45.5	40.9	131.42a	12.82p	20.61	15
60.00%	54.6	49.0	131.42a	12.82p	20.99	15
70.00%	63.8	57.2	131.42a	12.82p	21.37	15
80.00%	72.9	65.4	131.42a	12.82p	21.75	15
90.00%	82.0	73.5	131.42a	12.82p	22.13	15
95.00%	86.5	77.6	131.42a	12.82p	22.32	15
98.00%	89.3	80.1	131.42a	12.82p	22.43	15
100.00%	91.1	81.7	131.42a	12.82p	22.51	

Diesel Oil Settling Tank No. 1 (γ = 0.897 t/m³) - TAG: TQ-513302A

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	8.0	7.1	127.24a	12.82p	18.90	26
10.00%	15.9	14.3	127.24a	12.82p	19.09	26
20.00%	31.8	28.6	127.24a	12.82p	19.47	26
30.00%	47.8	42.9	127.24a	12.82p	19.85	26
40.00%	63.7	57.1	127.24a	12.82p	20.23	26
50.00%	79.6	71.4	127.24a	12.82p	20.61	26
60.00%	95.5	85.7	127.24a	12.82p	20.99	26
70.00%	111.5	100.0	127.24a	12.82p	21.37	26
80.00%	127.4	114.3	127.24a	12.82p	21.75	26
90.00%	143.3	128.5	127.24a	12.82p	22.13	26
95.00%	151.3	135.7	127.24a	12.82p	22.32	26
98.00%	156.0	140.0	127.24a	12.82p	22.43	26
100.00%	159.2	142.8	127.24a	12.82p	22.51	

Diesel Oil Settling Tank No. 2 (γ = 0.897 t/m³) - TAG: TQ-513302B

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	5.7	5.1	122.68a	12.82p	18.90	19
10.00%	11.4	10.2	122.68a	12.82p	19.09	19
20.00%	22.8	20.4	122.68a	12.82p	19.47	19
30.00%	34.1	30.6	122.68a	12.82p	19.85	19
40.00%	45.5	40.8	122.68a	12.82p	20.23	19
50.00%	56.9	51.0	122.68a	12.82p	20.61	19
60.00%	68.2	61.2	122.68a	12.82p	20.99	19
70.00%	79.6	71.4	122.68a	12.82p	21.37	19
80.00%	91.0	81.6	122.68a	12.82p	21.75	19
90.00%	102.4	91.8	122.68a	12.82p	22.13	19
95.00%	108.1	96.9	122.68a	12.82p	22.32	19
98.00%	111.5	100.0	122.68a	12.82p	22.43	19
100.00%	113.7	102.0	122.68a	12.82p	22.51	

5.1.4. Fresh Water Tanks

Potable Water Tank PS (γ = 1.000 t/m³) - TAG: TQ-512201B

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	15.1	15.1	156.66a	8.69p	23.39	1011
10.00%	30.2	30.2	156.67a	8.73p	23.50	1050
20.00%	60.3	60.3	156.68a	8.83p	23.73	1121
30.00%	90.4	90.4	156.69a	8.91p	23.95	1187
40.00%	120.6	120.6	156.69a	8.99p	24.17	1254
50.00%	150.7	150.7	156.70a	9.07p	24.39	1321
60.00%	180.8	180.8	156.71a	9.14p	24.60	1390
70.00%	211.0	211.0	156.71a	9.21p	24.81	1453
80.00%	241.1	241.1	156.72a	9.28p	25.02	1513
90.00%	271.2	271.2	156.73a	9.35p	25.22	1574
95.00%	286.3	286.3	156.73a	9.36p	25.32	1128
98.00%	295.4	295.4	156.73a	9.34p	25.38	717
100.00%	301.4	301.4	156.73a	9.27p	25.42	

Potable Water Tank SB (γ = 1.000 t/m³) - TAG: TQ-512201A

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	16.8	16.8	156.79a	8.20s	23.39	1237
10.00%	33.4	33.4	156.79a	8.25s	23.50	1280
20.00%	66.8	66.8	156.80a	8.34s	23.73	1363
30.00%	100.2	100.2	156.81a	8.42s	23.95	1439
40.00%	133.6	133.6	156.81a	8.49s	24.17	1515
50.00%	167.0	167.0	156.82a	8.57s	24.38	1593
60.00%	200.4	200.4	156.82a	8.64s	24.59	1673
70.00%	233.7	233.7	156.83a	8.71s	24.80	1746
80.00%	267.1	267.1	156.83a	8.77s	25.01	1816
90.00%	300.5	300.5	156.83a	8.84s	25.22	1886
95.00%	317.2	317.2	156.84a	8.85s	25.32	1340
98.00%	327.1	327.1	156.84a	8.82s	25.38	878
100.00%	333.9	333.9	156.83a	8.76s	25.42	

Destilled Water Tank DEST (γ = 1.000 t/m³) - TAG: TQ-512202

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	1.1	1.1	147.76a	11.87s	18.83	2
10.00%	2.2	2.2	147.76a	11.87s	18.94	2
20.00%	4.5	4.5	147.76a	11.87s	19.17	2
30.00%	6.7	6.7	147.76a	11.87s	19.40	2
40.00%	8.9	8.9	147.76a	11.87s	19.63	2
50.00%	11.2	11.2	147.76a	11.87s	19.86	2
60.00%	13.4	13.4	147.76a	11.87s	20.08	2
70.00%	15.7	15.7	147.76a	11.87s	20.31	2
80.00%	17.9	17.9	147.76a	11.87s	20.54	2
90.00%	20.1	20.1	147.76a	11.87s	20.77	2
95.00%	21.2	21.2	147.76a	11.87s	20.89	2
98.00%	21.9	21.9	147.76a	11.87s	20.95	2
100.00%	22.4	22.4	147.76a	11.87s	21.00	

5.1.5. Lubricating Oil Tank

L. O. Storage Tank (γ = 0.897 t/m³) - TAG: TQ-632301

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	1.5	1.4	144.72a	12.28s	18.83	5
10.00%	3.0	2.7	144.72a	12.28s	18.94	5
20.00%	6.1	5.4	144.72a	12.28s	19.17	5
30.00%	9.1	8.2	144.72a	12.28s	19.40	5
40.00%	12.1	10.9	144.72a	12.28s	19.63	5
50.00%	15.2	13.6	144.72a	12.28s	19.86	5
60.00%	18.2	16.3	144.72a	12.28s	20.08	5
70.00%	21.2	19.0	144.72a	12.28s	20.31	5
80.00%	24.2	21.7	144.72a	12.28s	20.54	5
90.00%	27.3	24.5	144.72a	12.28s	20.77	5
95.00%	28.8	25.8	144.72a	12.28s	20.89	5
98.00%	29.7	26.6	144.72a	12.28s	20.95	5
100.00%	30.3	27.2	144.72a	12.28s	21.00	

5.1.6. Miscellaneous Tanks

Sewage Tank (γ = 1.000 t/m³) - TAG: TQ-531201

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	13.3	13.3	123.48a	12.69s	6.10	35
10.00%	26.5	26.5	123.49a	12.78s	6.38	44
20.00%	53.0	53.0	123.51a	12.94s	6.90	64
30.00%	79.5	79.5	123.53a	13.09s	7.38	84
40.00%	105.9	105.9	123.55a	13.22s	7.83	105
50.00%	132.4	132.4	123.56a	13.34s	8.25	129
60.00%	159.0	159.0	123.57a	13.45s	8.65	154
70.00%	185.5	185.5	123.59a	13.56s	9.04	181
80.00%	212.0	212.0	123.60a	13.67s	9.40	210
90.00%	238.5	238.5	123.60a	13.77s	9.75	240
95.00%	251.8	251.8	123.61a	13.82s	9.92	256
98.00%	259.7	259.7	123.61a	13.85s	10.02	265
100.00%	265.0	265.0	123.61a	13.87s	10.09	

Overflow Tank (γ = 1.000 t/m³) - TAG: TQ-513308

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	13.3	13.3	123.48a	12.69p	6.10	35
10.00%	26.5	26.5	123.49a	12.78p	6.38	44
20.00%	53.0	53.0	123.51a	12.94p	6.90	64
30.00%	79.5	79.5	123.53a	13.09p	7.38	84
40.00%	105.9	105.9	123.55a	13.22p	7.83	105
50.00%	132.4	132.4	123.56a	13.34p	8.25	129
60.00%	159.0	159.0	123.57a	13.45p	8.65	154
70.00%	185.5	185.5	123.59a	13.56p	9.04	181
80.00%	212.0	212.0	123.60a	13.67p	9.40	210
90.00%	238.5	238.5	123.60a	13.77p	9.75	240
95.00%	251.8	251.8	123.61a	13.82p	9.92	256
98.00%	259.7	259.7	123.61a	13.85p	10.02	265
100.00%	265.0	265.0	123.61a	13.87p	10.09	

Bilge Tank (γ = 1.000 t/m³) - TAG: TQ-533607

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	4.8	4.8	133.09a	1.77p	0.12	38
10.00%	9.6	9.6	133.10a	1.99p	0.21	58
20.00%	19.1	19.1	133.12a	2.27p	0.38	89
30.00%	28.7	28.7	133.13a	2.47p	0.52	122
40.00%	38.2	38.2	133.13a	2.64p	0.66	149
50.00%	47.8	47.8	133.14a	2.78p	0.79	176
60.00%	57.4	57.4	133.14a	2.90p	0.91	201
70.00%	67.0	67.0	133.14a	3.01p	1.02	227
80.00%	76.5	76.5	133.14a	3.11p	1.14	253
90.00%	86.1	86.1	133.14a	3.20p	1.25	275
95.00%	90.9	90.9	133.14a	3.24p	1.30	286
98.00%	93.8	93.8	133.14a	3.26p	1.33	292
100.00%	95.7	95.7	133.15a	3.28p	1.35	

Drain Tank (γ = 1.000 t/m³) - TAG: TQ-513307

Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (MT-m)
0.00%	0.0	0.0				
5.00%	3.0	3.0	144.34a	0.00	1.53	48.3
10.00%	6.0	6.0	144.34a	0.00	1.62	64.4
20.00%	12.1	12.1	144.34a	0.00	1.75	67.9
30.00%	18.2	18.2	144.34a	0.00	1.88	67.9
40.00%	24.2	24.2	144.34a	0.00	1.99	67.9
50.00%	30.2	30.2	144.34a	0.00	2.12	67.9
60.00%	36.3	36.3	144.34a	0.00	2.24	67.9
70.00%	42.3	42.3	144.34a	0.00	2.36	67.9
80.00%	48.4	48.4	144.34a	0.00	2.48	67.9
90.00%	54.4	54.4	144.34a	0.00	2.60	67.9
95.00%	57.4	57.4	144.34a	0.00	2.65	67.9
98.00%	59.2	59.2	144.34a	0.00	2.69	67.9
100.00%	60.4	60.4	144.34a	0.00	2.71	

5.2. Resume

Cargo Oil Tank (γ = 0.920 t/m³)										
Tanks		**Frames**		**Volume 100%**	**Volume 95%**	**Weight 95%**	**Lcg**	**Tcg**	**Vcg**	**Inertia**
		Aft	**Fwd**	**(m³)**	**(m³)**	**(tons)**	**(m)**	**(m)**	**(m)**	**(m⁴)**
Cargo Oil Tank No. 1C		109	113	11221	10660	9807	-117.22	0.00	13.76	15789
Cargo Oil Tank No. 2C		97	109	33658	31975	29418	-79.14	0.00	13.76	47364
Cargo Oil Tank No. 3C		85	97	33658	31975	29418	-22.02	0.00	13.76	47363
Cargo Oil Tank No. 4C		73	85	33658	31975	29418	35.10	0.00	13.76	47364
Cargo Oil Tank No. 5C		61	73	30561	29033	26711	89.85	-0.04	14.17	45995
Cargo Oil Tank No. 1A	PS	109	117	12427	11806	10862	-124.82	17.10	14.33	8500
	SB	109	117	12427	11806	10862	-124.82	-17.10	14.33	8500
Cargo Oil / Separation Tank No.2A	PS	99	105	11555	10978	10100	-74.38	18.28	13.54	8175
	SB	99	105	11555	10978	10100	-74.38	-18.28	13.54	8175
Cargo Oil Tank No. 3	PS	93	99	11556	10978	10100	-45.82	18.28	13.53	8175
	SB	93	99	11556	10978	10100	-45.82	-18.28	13.53	8175
Cargo Oil Tank No. 3A	PS	87	93	11556	10978	10100	-17.26	18.28	13.53	8175
	SB	87	93	11556	10978	10100	-17.26	-18.28	13.53	8175
Cargo Oil / Separation Tank No.4	PS	77	82	9630	9148	8416	32.72	18.28	13.53	6812
	SB	77	82	9630	9148	8416	32.72	-18.28	13.53	6812
Cargo Oil Tank No. 4A	PS	73	77	7683	7299	6715	54.14	18.28	13.53	5435
	SB	73	77	7683	7298	6715	54.14	-18.28	13.53	5435
Cargo Oil Tank No. 5	PS	64	73	15975	15178	13964	84.21	17.85	14.21	12127
	SB	64	73	15975	15178	13964	84.21	-17.85	14.21	12127
Slop	PS	61	64	3730	3544	3260	113.06	16.61	16.65	3604
	SB	61	64	3730	3544	3260	113.06	-16.61	16.65	3604
			Total	310980	295435	271806				

Diesel Oil and Lubricating Oil Tank (γ = 0.897 t/m³)										
Tanks	**TAG**	**Frames**		**Volume 100%**	**Volume 98%**	**Weight 98%**	**Lcg**	**Tcg**	**Vcg**	**Inertia**
		Aft	**Fwd**	**(m^3)**	**(m^3)**	**(tons)**	**(m)**	**(m)**	**(m)**	**(m^4)**
Storage Diesel Oil Tank No. 1	TQ-513301 A	26	45	589	577	517	141.41	13.59	23.26	570
Storage Diesel Oil Tank No. 2	TQ-513301 B	32	45	294	288	258	137.88	-12.54	23.06	35
Diesel Oil Daily Tank	TQ-513303	45	49	91	89	80	131.42	12.82	22.51	17
Settling Tank No. 1	TQ-513302 A	49	56	159	156	140	127.24	12.82	22.51	29
Settling Tank No. 2	TQ-513302 B	56	61	114	112	100	122.68	12.82	22.51	21
Emergency Generator Tank	TQ-513304	18	23	8	8	7	151.57	15.25	31.91	0
Inert Gas Daily Service Tank (PS/SB)	TQ-513306 B/A	34	36	2 x 7	2 x 6.9	2 x 6.2	140.55	0.00	32.32	2 x 3
			Total	1269	1244	1114				
Lubricating Oil Storage Tank	TQ-632301	28	31	30	30	27	144.72	-12.28	21.00	6

Fresh Water Tank (γ = 1.000 t/m³)

Tanks		TAG	Frames		Volume 100% (m^3)	Weight 100% (tons)	Lcg (m)	Tcg (m)	Vcg (m)	Inertia (m^4)
			Aft	Fwd						
Potable Water Tank	PS	TQ-512201 B	7	17	301	301	156.73	9.27	25.42	1574
	SB	TQ-512201 A	7	17	334	334	156.83	-8.76	25.42	1886
				Total	635	635				
Destilled Water Tank		TQ-512202	24	27	22	22	147.76	-11.87	21.00	2

Water Ballast Tank (γ = 1.025 t/m³)

Tanks		Frames		Volume 100% (m^3)	Weight 100% (tons)	Lcg (m)	Tcg (m)	Vcg (m)	Inertia (m^4)
		Aft	Fwd						
Fore Peak Tank		120	F.E.	4374	4483	-158.90	0.00	12.03	6805
Water Ballast Tank No. 1	PS	117	120	2919	2992	-149.52	7.85	14.23	3490
	SB	117	120	2919	2992	-149.52	-7.85	14.23	3490
Water Ballast Tank No. 2	PS	105	109	7661	7852	-98.16	18.24	13.60	5452
	SB	105	109	7661	7852	-98.16	-18.24	13.60	5452
Water Ballast Tank No. 3B	PS	82	87	9630	9870	8.92	18.28	13.53	6812
	SB	82	87	9630	9870	8.92	-18.28	13.53	6812
After Peak Tank		A.E.	17	2269	2326	161.71	0.00	19.86	21292
			Total	47063	48237				

Process Plant Tank					
Tanks	**TAG**	**Volume 100% (m^3)**	**Lcg (m)**	**Tcg (m)**	**Vcg (m)**
Furnace Crude Oil Tank	TQ-512503	10.00	-103.31	-18.16	34.94
Furnace Diesel Tank	TQ-513311	38.00	-99.87	-18.16	36.43
Furnace Pilot Diesel Tank	TQ-513313	1.00	-110.30	-19.20	34.58
Lub Oil Storage Tank	TQ-632308	1.70	27.11	12.71	42.09
Process Plant Generator Diesel Daily Tank (A)	TQ-513312A	15.50	22.18	16.98	42.33
Process Plant Generator Diesel Daily Tank (B)	TQ-513312B	15.50	22.18	20.52	42.33
HT Cooling Water Expansion Tank A/B	TQ-512407	0.10	27.07	-9.55	41.59
LT Cooling Water Expansion Tank A/B	TQ-512408	0.10	27.07	-10.79	41.59
Cooling Water Expansion Tank	TQ-512406	0.60	16.72	-17.75	42.48
Hot Water Expansion Vessel	V-512501	3.45	-110.79	-16.15	52.96
Slop Vessel (PS)	V-533602 A	30.00	-22.59	15.83	30.07
Slop Vessel (PS)	V-533602 B	30.00	-24.59	8.83	30.07
Open Drain Tk. Non Classified Area	TQ-533603	5.40	2.95	-16.65	30.09
Open Drain Tk. Classified Area (SB)	TQ-533604A	10.00	-21.32	-8.55	30.07
Open Drain Tk. Classified Area (SB)	TQ-533604B	10.00	-21.32	-12.25	30.07
Vent K.O. Drum	V-541202	16.50	-51.85	17.08	34.63
Hydraulic Storage Tank	TQ-UH-122301-01	5.00	16.60	-19.34	32.73
Hydraulic Drain Tank	TQ-UH-122301-02	10.00	13.03	-15.79	32.62
Cargo Oil Tk. Sealing Unit	TQ-B-122301 A-A/A-B/B-A/B-B/C-A/C-B	6 x 0.026	120.30	-5.00	31.30
Water in Oil Demulsifier Tk.	TQ-UQ-126101	14.70	-81.85	11.13	33.38
Biocide Tk.	TQ-UQ-126201-01	4.60	-75.47	10.04	36.56
Inverted Emulsion Inhybitor Tk.	TQ-UQ-126201-02	9.00	-75.47	10.04	36.56
Scale Inhybitor Tk.	TQ-UQ-126201-03	5.20	-75.47	10.04	36.56
Oil Water Chemical Injection Skid	TQ-UQ-126202	0.39	114.01	10.04	32.74
Oil Dehydrator A	TO-122301A	284.00	-10.12	13.53	36.13
Oil Dehydrator B	TO-122301B	284.00	-10.12	-13.53	36.13
Gas Flotation Unit A	FL-533101A	43.78	-40.63	17.27	36.24
Gas Flotation Unit B	FL-533101B	43.78	-40.63	-17.27	36.24

Miscellaneous Tank (γ = 1.000 t/m³)									
Tanks	**TAG**	**Frames**		**Volume 100%**	**Weight 100%**	**Lcg**	**Tcg**	**Vcg**	**Inertia**
		Aft	**Fwd**	**(m³)**	**(tons)**	**(m)**	**(m)**	**(m)**	**(m⁴)**
Sewage Tank	TQ-531201	53	61	265	265	123.61	-13.87	10.09	265
Over Flow Tank	TQ-513308	53	61	265	265	123.61	13.87	10.09	265
Bilge Tank	TQ-533607	40	49	96	96	133.15	3.28	1.35	292
Sludge Tank	TQ-533608	26	33	20	20	144.26	3.73	2.89	5
Drain Tank	TQ-513307	27	33	60	60	144.34	0.00	2.71	68
Drain Clean Tank	TQ-513309	51	53	7	7	127.70	7.06	1.67	7
Bilge Well	-	17	20	12	12	152.99	0.00	3.17	12
Bilge Well	-	23	25	2	2	148.90	0.65	3.15	0
Bilge Well	-	37	39	2	2	138.19	-5.30	1.92	0
Bilge Well	-	37	40	3	3	137.73	5.36	1.89	1
Bilge Well	-	51	52	1	1	128.00	4.07	0.92	0
Bilge Well	-	51	52	1	1	128.00	-4.07	0.92	0

Void Space								
Tanks		**Frames**		**Volume 100%**	**Lcg**	**Tcg**	**Vcg**	**Inertia**
		Aft	**Fwd**	**(m³)**	**(m)**	**(m)**	**(m)**	**(m⁴)**
Turret (C) (Cofferdam)		113	117	9054	-135.70	0.00	13.77	15467
Engine (Void Space)	PS	32	61	2127	130.06	16.86	20.87	2773
	SB	32	61	2490	129.61	-16.28	21.11	2920
Double Bottom Engine (Void Space)		17	61	745	133.94	-0.737	1.56	
Stern Tube (C) (Void Space)		10	17	110	155.65	0.00	7.99	70

6. HYDROSTATIC PROPERTIES

6.1. Symbols

Hydrostatic Properties

LCF Draft - Correspondent draft in relation to the moulded base line at LCF position

Displ - Salt water displacement

LCB - Longitudinal position of the center of buoyancy in relation to the midship section (positive aft)

VCB - Vertical position of the center of buoyancy in relation to the moulded base line

LCF - Longitudinal position of the center of fluctuation relation to the midship section (positive aft)

TPcm - Tons by immersion centimeter (t/cm)

MTcm - Moment to change trim 1 cm

KML - Vertical position of the longitudinal metacenter in relation to the moulded base line

KMT - Vertical position of the transversal metacenter in relation to the moulded base line

Hull Form Coefficients

Draft - Correspondent draft in relation to the moulded base line

Volume - Moulded hull volume (naked)

Cp - Prismatic coefficient

Cb - Block coefficient

Cms - Midship section coefficient

Cwp - Water plane area coefficient

Cvp - Vertical prismatic coefficient

Cws - Wetted surface area coefficient

WS Area - Wetted surface area

Note: The table considers a sea water density γ = 1.025 t/m^3, Vcg = 0, no trim and no heel.

Note: Keel thickness = 30mm

6.2. Hydrostatic Properties

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
5.000	68222.383	12.254f	2.561	11.562f	143.62	2837.86	1369.312	43.908
5.010	68366.031	12.253f	2.566	11.558f	143.64	2838.57	1366.779	43.833
5.020	68509.688	12.251f	2.572	11.555f	143.65	2839.29	1364.256	43.757
5.030	68653.344	12.250f	2.577	11.552f	143.66	2840.00	1361.742	43.682
5.040	68797.000	12.248f	2.582	11.549f	143.68	2840.70	1359.236	43.608
5.050	68940.688	12.247f	2.587	11.546f	143.69	2841.41	1356.740	43.533
5.060	69084.383	12.245f	2.592	11.543f	143.70	2842.11	1354.253	43.459
5.070	69228.125	12.244f	2.597	11.540f	143.72	2842.81	1351.774	43.386
5.080	69371.828	12.243f	2.602	11.537f	143.73	2843.51	1349.306	43.312
5.090	69515.586	12.241f	2.607	11.534f	143.75	2844.21	1346.847	43.239
5.100	69659.289	12.240f	2.613	11.532f	143.76	2844.91	1344.397	43.166
5.110	69803.086	12.238f	2.618	11.529f	143.77	2845.60	1341.956	43.094
5.120	69946.859	12.237f	2.623	11.526f	143.79	2846.30	1339.526	43.022
5.130	70090.664	12.235f	2.628	11.523f	143.80	2847.00	1337.105	42.950
5.140	70234.492	12.234f	2.633	11.520f	143.81	2847.69	1334.693	42.878
5.150	70378.297	12.232f	2.638	11.514f	143.82	2848.22	1332.211	42.807
5.160	70522.117	12.231f	2.643	11.511f	143.84	2848.91	1329.819	42.736
5.170	70665.953	12.229f	2.649	11.508f	143.85	2849.61	1327.436	42.666
5.180	70809.836	12.228f	2.654	11.505f	143.86	2850.30	1325.062	42.595
5.190	70953.719	12.226f	2.659	11.502f	143.88	2851.00	1322.698	42.525
5.200	71097.586	12.225f	2.664	11.499f	143.89	2851.69	1320.343	42.455
5.210	71241.469	12.224f	2.669	11.496f	143.90	2852.39	1317.999	42.386
5.220	71385.375	12.222f	2.674	11.493f	143.92	2853.09	1315.663	42.317
5.230	71529.320	12.221f	2.679	11.490f	143.93	2853.79	1313.337	42.248
5.240	71673.250	12.219f	2.684	11.487f	143.94	2854.48	1311.019	42.180
5.250	71817.227	12.218f	2.690	11.484f	143.96	2855.17	1308.708	42.111
5.260	71961.188	12.216f	2.695	11.481f	143.97	2855.87	1306.406	42.043
5.270	72105.117	12.215f	2.700	11.478f	143.98	2856.56	1304.114	41.976
5.280	72249.125	12.213f	2.705	11.475f	144.00	2857.25	1301.830	41.908
5.290	72393.141	12.212f	2.710	11.472f	144.01	2857.94	1299.555	41.841
5.300	72537.172	12.210f	2.715	11.469f	144.02	2858.63	1297.287	41.774
5.310	72681.188	12.209f	2.720	11.466f	144.04	2859.32	1295.028	41.708
5.320	72825.234	12.207f	2.726	11.463f	144.05	2860.01	1292.778	41.642
5.330	72969.289	12.206f	2.731	11.460f	144.06	2860.70	1290.537	41.576
5.340	73113.359	12.204f	2.736	11.457f	144.08	2861.39	1288.304	41.510
5.350	73257.453	12.203f	2.741	11.454f	144.09	2862.08	1286.080	41.444
5.360	73401.570	12.201f	2.746	11.451f	144.10	2862.76	1283.864	41.379
5.370	73545.648	12.200f	2.751	11.449f	144.12	2863.45	1281.657	41.314
5.380	73689.773	12.198f	2.756	11.446f	144.13	2864.14	1279.459	41.250
5.390	73833.914	12.197f	2.761	11.443f	144.14	2864.83	1277.269	41.185
5.400	73978.063	12.196f	2.767	11.440f	144.16	2865.53	1275.088	41.121
5.410	74122.234	12.194f	2.772	11.437f	144.17	2866.21	1272.914	41.058
5.420	74266.438	12.193f	2.777	11.434f	144.18	2866.90	1270.748	40.994
5.430	74410.602	12.191f	2.782	11.431f	144.20	2867.59	1268.589	40.931
5.440	74554.805	12.190f	2.787	11.428f	144.21	2868.27	1266.437	40.868
5.450	74699.000	12.188f	2.792	11.425f	144.22	2868.96	1264.293	40.805
5.460	74843.266	12.187f	2.797	11.422f	144.24	2869.64	1262.157	40.742
5.470	74987.516	12.185f	2.803	11.419f	144.25	2870.32	1260.029	40.680
5.480	75131.766	12.184f	2.808	11.416f	144.26	2871.01	1257.909	40.618
5.490	75276.016	12.182f	2.813	11.413f	144.28	2871.69	1255.797	40.556

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
5.500	75420.297	12.181f	2.818	11.409f	144.29	2872.37	1253.694	40.495
5.510	75564.609	12.179f	2.823	11.406f	144.30	2873.06	1251.597	40.434
5.520	75708.953	12.178f	2.828	11.403f	144.32	2873.74	1249.508	40.373
5.530	75853.250	12.176f	2.833	11.400f	144.33	2874.43	1247.428	40.312
5.540	75997.586	12.175f	2.838	11.397f	144.34	2875.11	1245.355	40.251
5.550	76141.922	12.173f	2.844	11.393f	144.36	2875.73	1243.264	40.191
5.560	76286.305	12.172f	2.849	11.390f	144.37	2876.42	1241.206	40.131
5.570	76430.703	12.170f	2.854	11.387f	144.38	2877.10	1239.156	40.071
5.580	76575.102	12.169f	2.859	11.384f	144.40	2877.79	1237.114	40.012
5.590	76719.453	12.168f	2.864	11.381f	144.41	2878.47	1235.080	39.953
5.600	76863.883	12.166f	2.869	11.378f	144.42	2879.16	1233.053	39.893
5.610	77008.305	12.165f	2.874	11.375f	144.44	2879.84	1231.033	39.835
5.620	77152.758	12.163f	2.879	11.372f	144.45	2880.53	1229.020	39.776
5.630	77297.195	12.162f	2.885	11.369f	144.46	2881.21	1227.016	39.718
5.640	77441.703	12.160f	2.890	11.366f	144.48	2881.90	1225.017	39.660
5.650	77586.141	12.159f	2.895	11.363f	144.49	2882.58	1223.027	39.602
5.660	77730.641	12.157f	2.900	11.360f	144.50	2883.27	1221.044	39.544
5.670	77875.141	12.156f	2.905	11.357f	144.51	2883.95	1219.068	39.487
5.680	78019.695	12.154f	2.910	11.354f	144.53	2884.64	1217.098	39.430
5.690	78164.203	12.153f	2.915	11.351f	144.54	2885.32	1215.137	39.373
5.700	78308.789	12.151f	2.921	11.348f	144.55	2886.01	1213.182	39.316
5.710	78453.313	12.150f	2.926	11.345f	144.57	2886.70	1211.235	39.259
5.720	78597.891	12.148f	2.931	11.342f	144.58	2887.38	1209.295	39.203
5.730	78742.492	12.147f	2.936	11.339f	144.59	2888.07	1207.361	39.147
5.740	78887.094	12.145f	2.941	11.336f	144.61	2888.76	1205.435	39.091
5.750	79031.727	12.144f	2.946	11.333f	144.62	2889.44	1203.515	39.035
5.760	79176.328	12.142f	2.951	11.330f	144.63	2890.13	1201.602	38.980
5.770	79320.961	12.141f	2.956	11.327f	144.65	2890.82	1199.696	38.925
5.780	79465.633	12.139f	2.962	11.324f	144.66	2891.50	1197.795	38.870
5.790	79610.281	12.138f	2.967	11.321f	144.67	2892.18	1195.902	38.815
5.800	79755.000	12.136f	2.972	11.318f	144.69	2892.87	1194.014	38.761
5.810	79899.672	12.135f	2.977	11.315f	144.70	2893.55	1192.135	38.706
5.820	80044.375	12.133f	2.982	11.312f	144.71	2894.24	1190.261	38.652
5.830	80189.094	12.132f	2.987	11.309f	144.73	2894.92	1188.394	38.598
5.840	80333.828	12.130f	2.992	11.306f	144.74	2895.61	1186.534	38.545
5.850	80478.570	12.129f	2.998	11.303f	144.75	2896.29	1184.680	38.491
5.860	80623.328	12.127f	3.003	11.300f	144.77	2896.98	1182.833	38.438
5.870	80768.133	12.126f	3.008	11.297f	144.78	2897.66	1180.991	38.385
5.880	80912.883	12.124f	3.013	11.294f	144.79	2898.35	1179.158	38.332
5.890	81057.695	12.123f	3.018	11.291f	144.81	2899.04	1177.329	38.279
5.900	81202.500	12.122f	3.023	11.288f	144.82	2899.72	1175.509	38.227
5.910	81347.336	12.120f	3.028	11.285f	144.83	2900.41	1173.693	38.174
5.920	81492.195	12.119f	3.033	11.282f	144.85	2901.10	1171.884	38.122
5.930	81637.023	12.117f	3.039	11.279f	144.86	2901.78	1170.082	38.071
5.940	81781.875	12.116f	3.044	11.276f	144.87	2902.47	1168.286	38.019
5.950	81926.758	12.114f	3.049	11.273f	144.89	2903.15	1166.495	37.967
5.960	82071.688	12.113f	3.054	11.270f	144.90	2903.84	1164.711	37.916
5.970	82216.594	12.111f	3.059	11.267f	144.91	2904.53	1162.933	37.865
5.980	82361.500	12.110f	3.064	11.264f	144.93	2905.21	1161.162	37.814
5.990	82506.422	12.108f	3.069	11.261f	144.94	2905.90	1159.396	37.764
6.000	82651.367	12.107f	3.074	11.258f	144.95	2906.59	1157.637	37.713
6.010	82796.336	12.105f	3.080	11.254f	144.96	2907.16	1155.835	37.662
6.020	82941.336	12.104f	3.085	11.251f	144.97	2907.72	1154.039	37.610

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
6.030	83086.289	12.102f	3.090	11.247f	144.98	2908.29	1152.250	37.559
6.040	83231.289	12.101f	3.095	11.243f	145.00	2908.85	1150.466	37.509
6.050	83376.258	12.099f	3.100	11.239f	145.01	2909.42	1148.690	37.458
6.060	83521.273	12.098f	3.105	11.236f	145.02	2909.98	1146.918	37.408
6.070	83666.320	12.096f	3.110	11.232f	145.03	2910.55	1145.153	37.357
6.080	83811.352	12.095f	3.116	11.228f	145.04	2911.12	1143.394	37.307
6.090	83956.422	12.093f	3.121	11.224f	145.05	2911.69	1141.640	37.257
6.100	84101.383	12.092f	3.126	11.221f	145.06	2912.25	1139.895	37.208
6.110	84246.492	12.090f	3.131	11.217f	145.07	2912.82	1138.153	37.158
6.120	84391.602	12.089f	3.136	11.213f	145.08	2913.39	1136.418	37.109
6.130	84536.672	12.087f	3.141	11.210f	145.09	2913.96	1134.689	37.060
6.140	84681.766	12.086f	3.146	11.206f	145.10	2914.53	1132.966	37.011
6.150	84826.898	12.084f	3.151	11.202f	145.11	2915.10	1131.248	36.962
6.160	84971.992	12.083f	3.157	11.199f	145.12	2915.66	1129.537	36.913
6.170	85117.125	12.081f	3.162	11.195f	145.14	2916.23	1127.831	36.865
6.180	85262.242	12.080f	3.167	11.191f	145.15	2916.80	1126.131	36.817
6.190	85407.430	12.078f	3.172	11.187f	145.16	2917.37	1124.436	36.769
6.200	85552.578	12.077f	3.177	11.184f	145.17	2917.94	1122.746	36.721
6.210	85697.734	12.075f	3.182	11.180f	145.18	2918.50	1121.060	36.673
6.220	85842.914	12.074f	3.187	11.176f	145.19	2919.07	1119.381	36.626
6.230	85988.102	12.072f	3.192	11.172f	145.20	2919.63	1117.706	36.578
6.240	86133.359	12.071f	3.198	11.169f	145.21	2920.19	1116.037	36.531
6.250	86278.531	12.069f	3.203	11.165f	145.22	2920.76	1114.375	36.484
6.260	86423.820	12.067f	3.208	11.161f	145.23	2921.32	1112.717	36.437
6.270	86569.008	12.066f	3.213	11.157f	145.24	2921.89	1111.065	36.391
6.280	86714.281	12.064f	3.218	11.154f	145.25	2922.45	1109.418	36.344
6.290	86859.508	12.063f	3.223	11.150f	145.26	2923.01	1107.777	36.298
6.300	87004.805	12.061f	3.228	11.146f	145.27	2923.58	1106.140	36.252
6.310	87150.102	12.060f	3.234	11.142f	145.29	2924.14	1104.509	36.206
6.320	87295.367	12.058f	3.239	11.139f	145.30	2924.71	1102.884	36.160
6.330	87440.656	12.057f	3.244	11.135f	145.31	2925.27	1101.263	36.115
6.340	87585.969	12.055f	3.249	11.132f	145.32	2925.86	1099.659	36.069
6.350	87731.320	12.054f	3.254	11.126f	145.33	2926.26	1097.988	36.024
6.360	87876.641	12.052f	3.259	11.122f	145.34	2926.83	1096.384	35.979
6.370	88021.961	12.051f	3.264	11.118f	145.35	2927.40	1094.786	35.934
6.380	88167.352	12.049f	3.269	11.115f	145.36	2927.96	1093.192	35.889
6.390	88312.680	12.048f	3.275	11.111f	145.37	2928.53	1091.605	35.844
6.400	88458.086	12.046f	3.280	11.107f	145.38	2929.10	1090.022	35.800
6.410	88603.484	12.044f	3.285	11.104f	145.39	2929.67	1088.445	35.755
6.420	88748.859	12.043f	3.290	11.100f	145.40	2930.24	1086.872	35.711
6.430	88894.297	12.041f	3.295	11.096f	145.41	2930.80	1085.303	35.667
6.440	89039.656	12.040f	3.300	11.093f	145.42	2931.37	1083.740	35.623
6.450	89185.094	12.038f	3.305	11.089f	145.43	2931.93	1082.181	35.580
6.460	89330.539	12.037f	3.310	11.085f	145.44	2932.49	1080.625	35.536
6.470	89476.016	12.035f	3.316	11.081f	145.45	2933.05	1079.074	35.493
6.480	89621.484	12.034f	3.321	11.078f	145.47	2933.61	1077.528	35.449
6.490	89766.914	12.032f	3.326	11.074f	145.48	2934.17	1075.987	35.406
6.500	89912.406	12.031f	3.331	11.070f	145.49	2934.73	1074.451	35.363
6.510	90057.875	12.029f	3.336	11.066f	145.50	2935.28	1072.920	35.321
6.520	90203.398	12.027f	3.341	11.063f	145.51	2935.84	1071.392	35.278
6.530	90348.945	12.026f	3.346	11.059f	145.52	2936.40	1069.869	35.235
6.540	90494.391	12.024f	3.351	11.055f	145.53	2936.96	1068.353	35.193
6.550	90639.977	12.023f	3.357	11.051f	145.54	2937.51	1066.839	35.151

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
6.560	90785.516	12.021f	3.362	11.048f	145.55	2938.07	1065.331	35.109
6.570	90931.078	12.020f	3.367	11.044f	145.56	2938.63	1063.827	35.067
6.580	91076.633	12.018f	3.372	11.040f	145.57	2939.19	1062.328	35.025
6.590	91222.211	12.017f	3.377	11.036f	145.58	2939.74	1060.834	34.984
6.600	91367.820	12.015f	3.382	11.033f	145.59	2940.30	1059.345	34.942
6.610	91513.375	12.013f	3.387	11.029f	145.60	2940.86	1057.860	34.901
6.620	91658.984	12.012f	3.392	11.025f	145.61	2941.42	1056.380	34.860
6.630	91804.633	12.010f	3.398	11.021f	145.62	2941.97	1054.904	34.819
6.640	91950.266	12.009f	3.403	11.018f	145.63	2942.53	1053.433	34.778
6.650	92095.898	12.007f	3.408	11.014f	145.65	2943.09	1051.966	34.737
6.660	92241.547	12.006f	3.413	11.010f	145.66	2943.64	1050.504	34.697
6.670	92387.195	12.004f	3.418	11.006f	145.67	2944.20	1049.045	34.656
6.680	92532.875	12.002f	3.423	11.003f	145.68	2944.76	1047.592	34.616
6.690	92678.570	12.001f	3.428	10.999f	145.69	2945.31	1046.142	34.576
6.700	92824.250	11.999f	3.434	10.995f	145.70	2945.87	1044.698	34.536
6.710	92969.945	11.998f	3.439	10.992f	145.71	2946.43	1043.258	34.496
6.720	93115.672	11.996f	3.444	10.988f	145.72	2946.98	1041.822	34.456
6.730	93261.367	11.995f	3.449	10.984f	145.73	2947.54	1040.391	34.417
6.740	93407.133	11.993f	3.454	10.980f	145.74	2948.10	1038.963	34.377
6.750	93552.898	11.991f	3.459	10.977f	145.75	2948.65	1037.541	34.338
6.760	93698.609	11.990f	3.464	10.973f	145.76	2949.21	1036.122	34.299
6.770	93844.414	11.988f	3.469	10.969f	145.77	2949.77	1034.708	34.259
6.780	93990.148	11.987f	3.475	10.965f	145.78	2950.32	1033.299	34.221
6.790	94135.977	11.985f	3.480	10.962f	145.79	2950.88	1031.893	34.182
6.800	94281.750	11.983f	3.485	10.958f	145.80	2951.44	1030.492	34.143
6.810	94427.547	11.982f	3.490	10.954f	145.81	2951.99	1029.095	34.105
6.820	94573.406	11.980f	3.495	10.950f	145.82	2952.55	1027.702	34.066
6.830	94719.180	11.979f	3.500	10.947f	145.84	2953.11	1026.314	34.028
6.840	94865.055	11.977f	3.505	10.943f	145.85	2953.66	1024.927	33.990
6.850	95010.898	11.975f	3.510	10.939f	145.86	2954.21	1023.544	33.952
6.860	95156.766	11.974f	3.516	10.936f	145.87	2954.76	1022.165	33.914
6.870	95302.648	11.972f	3.521	10.932f	145.88	2955.31	1020.791	33.876
6.880	95448.531	11.971f	3.526	10.928f	145.89	2955.86	1019.421	33.839
6.890	95594.422	11.969f	3.531	10.925f	145.90	2956.41	1018.055	33.801
6.900	95740.305	11.968f	3.536	10.921f	145.91	2956.96	1016.692	33.764
6.910	95886.211	11.966f	3.541	10.917f	145.92	2957.50	1015.330	33.727
6.920	96032.156	11.964f	3.546	10.913f	145.93	2958.04	1013.971	33.690
6.930	96178.094	11.963f	3.551	10.909f	145.94	2958.57	1012.615	33.653
6.940	96324.039	11.961f	3.557	10.905f	145.95	2959.10	1011.262	33.616
6.950	96469.945	11.960f	3.562	10.901f	145.96	2959.63	1009.912	33.579
6.960	96615.961	11.958f	3.567	10.897f	145.97	2960.15	1008.565	33.542
6.970	96761.922	11.956f	3.572	10.893f	145.98	2960.67	1007.220	33.506
6.980	96907.891	11.955f	3.577	10.889f	145.99	2961.19	1005.878	33.470
6.990	97053.906	11.953f	3.582	10.885f	146.00	2961.70	1004.540	33.433
7.000	97199.914	11.952f	3.587	10.880f	146.01	2962.22	1003.206	33.397
7.010	97345.914	11.950f	3.592	10.877f	146.02	2962.71	1001.868	33.361
7.020	97491.945	11.948f	3.598	10.873f	146.03	2963.20	1000.533	33.324
7.030	97638.000	11.947f	3.603	10.869f	146.04	2963.69	999.200	33.288
7.040	97784.031	11.945f	3.608	10.865f	146.05	2964.17	997.871	33.252
7.050	97930.055	11.943f	3.613	10.861f	146.05	2964.66	996.546	33.216
7.060	98076.117	11.942f	3.618	10.858f	146.06	2965.14	995.225	33.180
7.070	98222.172	11.940f	3.623	10.854f	146.07	2965.63	993.907	33.144
7.080	98368.266	11.939f	3.628	10.850f	146.08	2966.11	992.594	33.108

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
7.090	98514.375	11.937f	3.633	10.846f	146.09	2966.60	991.284	33.073
7.100	98660.438	11.935f	3.639	10.842f	146.10	2967.08	989.978	33.037
7.110	98806.578	11.934f	3.644	10.838f	146.11	2967.57	988.675	33.002
7.120	98952.672	11.932f	3.649	10.834f	146.12	2968.05	987.377	32.967
7.130	99098.781	11.931f	3.654	10.831f	146.13	2968.54	986.082	32.932
7.140	99244.914	11.929f	3.659	10.827f	146.14	2969.02	984.791	32.897
7.150	99391.063	11.927f	3.664	10.823f	146.14	2969.51	983.504	32.862
7.160	99537.242	11.926f	3.669	10.819f	146.15	2969.99	982.220	32.827
7.170	99683.336	11.924f	3.674	10.815f	146.16	2970.48	980.941	32.792
7.180	99829.547	11.922f	3.680	10.811f	146.17	2970.97	979.664	32.758
7.190	99975.688	11.921f	3.685	10.807f	146.18	2971.45	978.392	32.724
7.200	100121.859	11.919f	3.690	10.804f	146.19	2971.94	977.124	32.689
7.210	100268.117	11.917f	3.695	10.800f	146.20	2972.42	975.858	32.655
7.220	100414.289	11.916f	3.700	10.796f	146.21	2972.91	974.596	32.621
7.230	100560.500	11.914f	3.705	10.792f	146.22	2973.39	973.338	32.587
7.240	100706.719	11.913f	3.710	10.788f	146.23	2973.88	972.084	32.553
7.250	100852.969	11.911f	3.715	10.784f	146.23	2974.37	970.833	32.520
7.260	100999.219	11.909f	3.721	10.780f	146.24	2974.85	969.585	32.486
7.270	101145.406	11.908f	3.726	10.777f	146.25	2975.34	968.342	32.453
7.280	101291.734	11.906f	3.731	10.773f	146.26	2975.82	967.101	32.419
7.290	101437.930	11.904f	3.736	10.769f	146.27	2976.31	965.865	32.386
7.300	101584.242	11.903f	3.741	10.765f	146.28	2976.80	964.632	32.353
7.310	101730.563	11.901f	3.746	10.761f	146.29	2977.28	963.402	32.320
7.320	101876.813	11.899f	3.751	10.757f	146.30	2977.77	962.176	32.287
7.330	102023.156	11.898f	3.756	10.754f	146.31	2978.26	960.952	32.254
7.340	102169.406	11.896f	3.762	10.750f	146.32	2978.74	959.734	32.221
7.350	102315.758	11.895f	3.767	10.746f	146.33	2979.23	958.517	32.188
7.360	102462.063	11.893f	3.772	10.742f	146.33	2979.72	957.305	32.156
7.370	102608.391	11.891f	3.777	10.738f	146.34	2980.20	956.096	32.124
7.380	102754.789	11.890f	3.782	10.734f	146.35	2980.69	954.889	32.091
7.390	102901.086	11.888f	3.787	10.731f	146.36	2981.17	953.687	32.059
7.400	103047.500	11.886f	3.792	10.727f	146.37	2981.66	952.487	32.027
7.410	103193.859	11.885f	3.797	10.723f	146.38	2982.14	951.290	31.995
7.420	103340.289	11.883f	3.803	10.719f	146.39	2982.63	950.097	31.963
7.430	103486.641	11.881f	3.808	10.715f	146.40	2983.11	948.907	31.931
7.440	103633.031	11.880f	3.813	10.711f	146.41	2983.60	947.721	31.900
7.450	103779.469	11.878f	3.818	10.707f	146.42	2984.08	946.537	31.868
7.460	103925.867	11.876f	3.823	10.703f	146.42	2984.56	945.357	31.837
7.470	104072.328	11.875f	3.828	10.700f	146.43	2985.05	944.180	31.805
7.480	104218.766	11.873f	3.833	10.696f	146.44	2985.53	943.006	31.774
7.490	104365.180	11.871f	3.838	10.692f	146.45	2986.02	941.836	31.743
7.500	104511.664	11.870f	3.844	10.688f	146.46	2986.50	940.669	31.712
7.510	104658.094	11.868f	3.849	10.684f	146.47	2986.99	939.505	31.681
7.520	104804.570	11.867f	3.854	10.680f	146.48	2987.47	938.344	31.650
7.530	104951.063	11.865f	3.859	10.676f	146.49	2987.95	937.186	31.619
7.540	105097.531	11.863f	3.864	10.673f	146.50	2988.44	936.032	31.588
7.550	105244.070	11.862f	3.869	10.669f	146.50	2988.92	934.880	31.558
7.560	105390.523	11.860f	3.874	10.665f	146.51	2989.41	933.733	31.527
7.570	105537.078	11.858f	3.879	10.661f	146.52	2989.89	932.587	31.497
7.580	105683.609	11.857f	3.885	10.657f	146.53	2990.38	931.445	31.467
7.590	105830.172	11.855f	3.890	10.653f	146.54	2990.86	930.305	31.436
7.600	105976.719	11.853f	3.895	10.649f	146.55	2991.35	929.170	31.406
7.610	106123.266	11.852f	3.900	10.645f	146.56	2991.83	928.037	31.376

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
7.620	106269.813	11.850f	3.905	10.642f	146.57	2992.32	926.907	31.346
7.630	106416.375	11.848f	3.910	10.638f	146.58	2992.80	925.781	31.317
7.640	106562.961	11.847f	3.915	10.634f	146.59	2993.29	924.657	31.287
7.650	106709.563	11.845f	3.920	10.630f	146.59	2993.77	923.536	31.257
7.660	106856.117	11.843f	3.926	10.626f	146.60	2994.26	922.419	31.228
7.670	107002.797	11.842f	3.931	10.622f	146.61	2994.74	921.303	31.198
7.680	107149.367	11.840f	3.936	10.618f	146.62	2995.23	920.192	31.169
7.690	107296.000	11.838f	3.941	10.615f	146.63	2995.71	919.083	31.140
7.700	107442.633	11.837f	3.946	10.611f	146.64	2996.19	917.977	31.111
7.710	107589.273	11.835f	3.951	10.607f	146.65	2996.68	916.875	31.082
7.720	107735.969	11.833f	3.956	10.603f	146.66	2997.17	915.775	31.053
7.730	107882.563	11.832f	3.961	10.599f	146.67	2997.65	914.678	31.024
7.740	108029.289	11.830f	3.967	10.595f	146.68	2998.14	913.584	30.995
7.750	108175.953	11.828f	3.972	10.591f	146.68	2998.62	912.493	30.966
7.760	108322.648	11.826f	3.977	10.585f	146.69	2998.94	911.353	30.938
7.770	108469.367	11.825f	3.982	10.581f	146.70	2999.42	910.266	30.909
7.780	108616.031	11.823f	3.987	10.577f	146.71	2999.90	909.184	30.881
7.790	108762.789	11.821f	3.992	10.573f	146.72	3000.38	908.103	30.853
7.800	108909.469	11.820f	3.997	10.570f	146.73	3000.87	907.026	30.824
7.810	109056.195	11.818f	4.002	10.566f	146.74	3001.35	905.951	30.796
7.820	109202.961	11.816f	4.008	10.562f	146.75	3001.83	904.879	30.768
7.830	109349.711	11.815f	4.013	10.558f	146.75	3002.31	903.810	30.740
7.840	109496.469	11.813f	4.018	10.554f	146.76	3002.80	902.744	30.712
7.850	109643.219	11.811f	4.023	10.550f	146.77	3003.28	901.680	30.684
7.860	109790.023	11.810f	4.028	10.546f	146.78	3003.76	900.620	30.657
7.870	109936.781	11.808f	4.033	10.542f	146.79	3004.24	899.562	30.629
7.880	110083.563	11.806f	4.038	10.538f	146.80	3004.73	898.507	30.602
7.890	110230.383	11.805f	4.043	10.535f	146.81	3005.21	897.455	30.574
7.900	110377.172	11.803f	4.049	10.531f	146.82	3005.70	896.405	30.547
7.910	110524.047	11.801f	4.054	10.527f	146.83	3006.18	895.357	30.519
7.920	110670.867	11.799f	4.059	10.523f	146.83	3006.66	894.314	30.492
7.930	110817.656	11.798f	4.064	10.519f	146.84	3007.14	893.272	30.465
7.940	110964.586	11.796f	4.069	10.515f	146.85	3007.63	892.233	30.438
7.950	111111.375	11.794f	4.074	10.511f	146.86	3008.11	891.197	30.411
7.960	111258.266	11.793f	4.079	10.507f	146.87	3008.59	890.164	30.384
7.970	111405.141	11.791f	4.084	10.504f	146.88	3009.08	889.133	30.358
7.980	111552.031	11.789f	4.090	10.500f	146.89	3009.56	888.105	30.331
7.990	111698.938	11.788f	4.095	10.496f	146.90	3010.04	887.079	30.304
8.000	111845.797	11.786f	4.100	10.492f	146.91	3010.53	886.056	30.278
8.010	111992.750	11.784f	4.105	10.487f	146.91	3010.94	885.014	30.251
8.020	112139.633	11.782f	4.110	10.483f	146.92	3011.34	883.975	30.224
8.030	112286.570	11.781f	4.115	10.478f	146.93	3011.75	882.938	30.197
8.040	112433.508	11.779f	4.120	10.474f	146.94	3012.16	881.904	30.170
8.050	112580.469	11.777f	4.125	10.469f	146.94	3012.57	880.873	30.143
8.060	112727.406	11.776f	4.131	10.465f	146.95	3012.98	879.844	30.116
8.070	112874.328	11.774f	4.136	10.460f	146.96	3013.39	878.818	30.090
8.080	113021.313	11.772f	4.141	10.455f	146.96	3013.80	877.794	30.063
8.090	113168.289	11.771f	4.146	10.451f	146.97	3014.21	876.773	30.037
8.100	113315.242	11.769f	4.151	10.446f	146.98	3014.62	875.755	30.011
8.110	113462.266	11.767f	4.156	10.442f	146.99	3015.03	874.739	29.984
8.120	113609.180	11.765f	4.161	10.437f	146.99	3015.43	873.726	29.958
8.130	113756.242	11.764f	4.166	10.433f	147.00	3015.84	872.715	29.932
8.140	113903.227	11.762f	4.172	10.428f	147.01	3016.25	871.707	29.906

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
8.150	114050.242	11.760f	4.177	10.423f	147.02	3016.66	870.701	29.880
8.160	114197.266	11.758f	4.182	10.419f	147.02	3017.07	869.697	29.854
8.170	114344.273	11.757f	4.187	10.414f	147.03	3017.47	868.695	29.828
8.180	114491.336	11.755f	4.192	10.410f	147.04	3017.88	867.695	29.803
8.190	114638.367	11.753f	4.197	10.406f	147.04	3018.28	866.698	29.777
8.200	114785.406	11.752f	4.202	10.401f	147.05	3018.68	865.704	29.751
8.210	114932.469	11.750f	4.207	10.397f	147.06	3019.09	864.712	29.726
8.220	115079.484	11.748f	4.212	10.392f	147.07	3019.49	863.723	29.700
8.230	115226.578	11.746f	4.218	10.388f	147.07	3019.89	862.735	29.675
8.240	115373.672	11.745f	4.223	10.383f	147.08	3020.30	861.751	29.650
8.250	115520.750	11.743f	4.228	10.379f	147.09	3020.70	860.769	29.625
8.260	115667.844	11.741f	4.233	10.377f	147.10	3021.27	859.836	29.599
8.270	115814.930	11.739f	4.238	10.372f	147.10	3021.67	858.858	29.574
8.280	115962.063	11.738f	4.243	10.368f	147.11	3022.07	857.882	29.549
8.290	116109.148	11.736f	4.248	10.363f	147.12	3022.48	856.910	29.525
8.300	116256.297	11.734f	4.253	10.359f	147.13	3022.88	855.939	29.500
8.310	116403.438	11.733f	4.259	10.354f	147.13	3023.28	854.971	29.475
8.320	116550.516	11.731f	4.264	10.350f	147.14	3023.68	854.005	29.450
8.330	116697.719	11.729f	4.269	10.345f	147.15	3024.08	853.042	29.426
8.340	116844.844	11.727f	4.274	10.341f	147.15	3024.49	852.081	29.401
8.350	116992.008	11.726f	4.279	10.336f	147.16	3024.89	851.122	29.377
8.360	117139.164	11.724f	4.284	10.332f	147.17	3025.29	850.166	29.352
8.370	117286.289	11.722f	4.289	10.327f	147.18	3025.69	849.213	29.328
8.380	117433.547	11.720f	4.294	10.323f	147.18	3026.10	848.261	29.304
8.390	117580.664	11.719f	4.300	10.318f	147.19	3026.50	847.312	29.280
8.400	117727.891	11.717f	4.305	10.314f	147.20	3026.90	846.365	29.256
8.410	117875.078	11.715f	4.310	10.309f	147.20	3027.30	845.421	29.232
8.420	118022.328	11.713f	4.315	10.305f	147.21	3027.71	844.478	29.208
8.430	118169.547	11.711f	4.320	10.300f	147.22	3028.11	843.538	29.184
8.440	118316.703	11.710f	4.325	10.296f	147.23	3028.51	842.601	29.160
8.450	118463.984	11.708f	4.330	10.291f	147.23	3028.92	841.666	29.136
8.460	118611.172	11.706f	4.335	10.287f	147.24	3029.32	840.733	29.113
8.470	118758.453	11.704f	4.341	10.282f	147.25	3029.72	839.802	29.089
8.480	118905.719	11.703f	4.346	10.278f	147.25	3030.12	838.873	29.066
8.490	119052.898	11.701f	4.351	10.273f	147.26	3030.53	837.948	29.042
8.500	119200.227	11.699f	4.356	10.269f	147.27	3030.93	837.023	29.019
8.510	119347.492	11.697f	4.361	10.264f	147.28	3031.33	836.101	28.995
8.520	119494.773	11.696f	4.366	10.260f	147.28	3031.73	835.182	28.972
8.530	119642.063	11.694f	4.371	10.255f	147.29	3032.14	834.265	28.949
8.540	119789.313	11.692f	4.376	10.251f	147.30	3032.54	833.350	28.926
8.550	119936.688	11.690f	4.381	10.247f	147.30	3032.94	832.436	28.903
8.560	120083.906	11.689f	4.387	10.242f	147.31	3033.35	831.526	28.880
8.570	120231.297	11.687f	4.392	10.238f	147.32	3033.75	830.617	28.857
8.580	120378.570	11.685f	4.397	10.233f	147.33	3034.15	829.711	28.834
8.590	120525.930	11.683f	4.402	10.229f	147.33	3034.56	828.807	28.811
8.600	120673.250	11.681f	4.407	10.224f	147.34	3034.96	827.905	28.789
8.610	120820.555	11.680f	4.412	10.220f	147.35	3035.36	827.006	28.766
8.620	120967.992	11.678f	4.417	10.215f	147.35	3035.77	826.107	28.744
8.630	121115.297	11.676f	4.422	10.211f	147.36	3036.17	825.212	28.721
8.640	121262.688	11.674f	4.428	10.206f	147.37	3036.57	824.319	28.699
8.650	121410.078	11.672f	4.433	10.202f	147.38	3036.98	823.427	28.676
8.660	121557.406	11.671f	4.438	10.197f	147.38	3037.38	822.539	28.654
8.670	121704.852	11.669f	4.443	10.193f	147.39	3037.78	821.651	28.632

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
8.680	121852.219	11.667f	4.448	10.188f	147.40	3038.18	820.766	28.610
8.690	121999.617	11.665f	4.453	10.184f	147.40	3038.59	819.883	28.588
8.700	122147.008	11.664f	4.458	10.179f	147.41	3038.99	819.002	28.566
8.710	122294.383	11.662f	4.463	10.175f	147.42	3039.39	818.123	28.544
8.720	122441.891	11.660f	4.469	10.170f	147.43	3039.79	817.246	28.522
8.730	122589.250	11.658f	4.474	10.166f	147.43	3040.20	816.371	28.500
8.740	122736.742	11.656f	4.479	10.161f	147.44	3040.60	815.498	28.478
8.750	122884.188	11.655f	4.484	10.157f	147.45	3041.00	814.627	28.456
8.760	123031.609	11.653f	4.489	10.152f	147.45	3041.40	813.759	28.435
8.770	123179.078	11.651f	4.494	10.148f	147.46	3041.80	812.892	28.413
8.780	123326.516	11.649f	4.499	10.143f	147.47	3042.21	812.028	28.392
8.790	123474.000	11.647f	4.504	10.139f	147.48	3042.61	811.165	28.370
8.800	123621.445	11.646f	4.509	10.134f	147.48	3043.01	810.305	28.349
8.810	123768.992	11.644f	4.515	10.130f	147.49	3043.41	809.446	28.327
8.820	123916.453	11.642f	4.520	10.126f	147.50	3043.82	808.589	28.306
8.830	124063.945	11.640f	4.525	10.121f	147.50	3044.22	807.735	28.285
8.840	124211.477	11.638f	4.530	10.117f	147.51	3044.62	806.883	28.264
8.850	124358.992	11.637f	4.535	10.112f	147.52	3045.02	806.032	28.243
8.860	124506.523	11.635f	4.540	10.108f	147.53	3045.43	805.183	28.222
8.870	124654.016	11.633f	4.545	10.103f	147.53	3045.83	804.337	28.201
8.880	124801.563	11.631f	4.550	10.099f	147.54	3046.23	803.492	28.180
8.890	124949.133	11.629f	4.556	10.094f	147.55	3046.63	802.649	28.159
8.900	125096.609	11.627f	4.561	10.090f	147.55	3047.04	801.809	28.138
8.910	125244.242	11.626f	4.566	10.085f	147.56	3047.44	800.970	28.118
8.920	125391.758	11.624f	4.571	10.081f	147.57	3047.84	800.133	28.097
8.930	125539.344	11.622f	4.576	10.076f	147.58	3048.25	799.298	28.076
8.940	125686.930	11.620f	4.581	10.072f	147.58	3048.65	798.465	28.056
8.950	125834.477	11.618f	4.586	10.067f	147.59	3049.05	797.635	28.035
8.960	125982.164	11.617f	4.591	10.063f	147.60	3049.45	796.805	28.015
8.970	126129.672	11.615f	4.596	10.058f	147.60	3049.86	795.978	27.995
8.980	126277.289	11.613f	4.602	10.054f	147.61	3050.26	795.152	27.974
8.990	126424.914	11.611f	4.607	10.049f	147.62	3050.65	794.326	27.954
9.000	126572.563	11.609f	4.612	10.045f	147.62	3051.04	793.501	27.934
9.010	126720.219	11.607f	4.617	10.040f	147.63	3051.43	792.677	27.914
9.020	126867.852	11.606f	4.622	10.035f	147.64	3051.82	791.855	27.894
9.030	127015.469	11.604f	4.627	10.030f	147.65	3052.20	791.034	27.874
9.040	127163.109	11.602f	4.632	10.026f	147.65	3052.58	790.214	27.854
9.050	127310.727	11.600f	4.637	10.021f	147.66	3052.96	789.396	27.834
9.060	127458.461	11.598f	4.643	10.016f	147.67	3053.34	788.579	27.814
9.070	127606.063	11.596f	4.648	10.011f	147.67	3053.72	787.766	27.794
9.080	127753.805	11.595f	4.653	10.007f	147.68	3054.10	786.952	27.774
9.090	127901.453	11.593f	4.658	10.002f	147.69	3054.48	786.142	27.754
9.100	128049.109	11.591f	4.663	9.997f	147.69	3054.86	785.333	27.735
9.110	128196.867	11.589f	4.668	9.992f	147.70	3055.24	784.526	27.715
9.120	128344.484	11.587f	4.673	9.987f	147.71	3055.62	783.721	27.696
9.130	128492.281	11.585f	4.678	9.983f	147.71	3056.00	782.916	27.676
9.140	128639.930	11.584f	4.684	9.978f	147.72	3056.38	782.114	27.657
9.150	128787.672	11.582f	4.689	9.973f	147.73	3056.76	781.314	27.637
9.160	128935.414	11.580f	4.694	9.968f	147.73	3057.14	780.515	27.618
9.170	129083.148	11.578f	4.699	9.963f	147.74	3057.52	779.718	27.599
9.180	129230.945	11.576f	4.704	9.959f	147.75	3057.90	778.923	27.580
9.190	129378.609	11.574f	4.709	9.954f	147.75	3058.27	778.131	27.560
9.200	129526.422	11.573f	4.714	9.949f	147.76	3058.65	777.339	27.541

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
9.210	129674.211	11.571f	4.719	9.944f	147.77	3059.03	776.549	27.522
9.220	129821.867	11.569f	4.724	9.939f	147.77	3059.41	775.762	27.503
9.230	129969.734	11.567f	4.730	9.935f	147.78	3059.79	774.975	27.484
9.240	130117.484	11.565f	4.735	9.930f	147.79	3060.17	774.191	27.465
9.250	130265.313	11.563f	4.740	9.925f	147.79	3060.55	773.408	27.447
9.260	130413.070	11.561f	4.745	9.920f	147.80	3060.92	772.628	27.428
9.270	130560.898	11.560f	4.750	9.916f	147.81	3061.30	771.848	27.409
9.280	130708.695	11.558f	4.755	9.911f	147.81	3061.68	771.071	27.390
9.290	130856.469	11.556f	4.760	9.906f	147.82	3062.06	770.295	27.372
9.300	131004.344	11.554f	4.765	9.901f	147.83	3062.44	769.521	27.353
9.310	131152.156	11.552f	4.771	9.896f	147.83	3062.82	768.749	27.335
9.320	131300.047	11.550f	4.776	9.892f	147.84	3063.20	767.978	27.316
9.330	131447.844	11.548f	4.781	9.887f	147.85	3063.58	767.210	27.298
9.340	131595.656	11.546f	4.786	9.882f	147.85	3063.96	766.442	27.280
9.350	131743.594	11.545f	4.791	9.877f	147.86	3064.33	765.676	27.261
9.360	131891.406	11.543f	4.796	9.872f	147.87	3064.71	764.913	27.243
9.370	132039.297	11.541f	4.801	9.868f	147.87	3065.09	764.150	27.225
9.380	132187.188	11.539f	4.806	9.863f	147.88	3065.47	763.390	27.207
9.390	132335.047	11.537f	4.811	9.858f	147.89	3065.85	762.631	27.189
9.400	132483.047	11.535f	4.817	9.853f	147.89	3066.23	761.873	27.170
9.410	132630.828	11.533f	4.822	9.848f	147.90	3066.61	761.118	27.153
9.420	132778.813	11.531f	4.827	9.844f	147.91	3066.98	760.364	27.135
9.430	132926.688	11.530f	4.832	9.839f	147.91	3067.36	759.612	27.117
9.440	133074.547	11.528f	4.837	9.834f	147.92	3067.74	758.861	27.099
9.450	133222.609	11.526f	4.842	9.829f	147.93	3068.12	758.112	27.081
9.460	133370.422	11.524f	4.847	9.824f	147.93	3068.50	757.365	27.063
9.470	133518.406	11.522f	4.852	9.820f	147.94	3068.88	756.619	27.046
9.480	133666.313	11.520f	4.857	9.815f	147.95	3069.26	755.875	27.028
9.490	133814.266	11.518f	4.863	9.810f	147.96	3069.64	755.132	27.010
9.500	133962.266	11.516f	4.868	9.805f	147.96	3070.02	754.391	26.993
9.510	134110.203	11.514f	4.873	9.800f	147.97	3070.39	753.652	26.975
9.520	134258.203	11.513f	4.878	9.796f	147.98	3070.77	752.914	26.958
9.530	134406.172	11.511f	4.883	9.791f	147.98	3071.15	752.178	26.941
9.540	134554.109	11.509f	4.888	9.786f	147.99	3071.53	751.444	26.923
9.550	134702.141	11.507f	4.893	9.781f	148.00	3071.91	750.711	26.906
9.560	134850.063	11.505f	4.898	9.776f	148.00	3072.29	749.980	26.889
9.570	134998.156	11.503f	4.904	9.772f	148.01	3072.67	749.250	26.872
9.580	135146.125	11.501f	4.909	9.767f	148.02	3073.05	748.522	26.854
9.590	135294.172	11.499f	4.914	9.762f	148.02	3073.43	747.795	26.837
9.600	135442.203	11.497f	4.919	9.757f	148.03	3073.81	747.070	26.820
9.610	135590.156	11.496f	4.924	9.753f	148.04	3074.19	746.347	26.803
9.620	135738.281	11.494f	4.929	9.748f	148.04	3074.57	745.624	26.786
9.630	135886.328	11.492f	4.934	9.743f	148.05	3074.95	744.904	26.769
9.640	136034.344	11.490f	4.939	9.738f	148.06	3075.32	744.185	26.753
9.650	136182.438	11.488f	4.944	9.733f	148.06	3075.70	743.468	26.736
9.660	136330.453	11.486f	4.950	9.729f	148.07	3076.08	742.752	26.719
9.670	136478.563	11.484f	4.955	9.724f	148.08	3076.46	742.038	26.702
9.680	136626.656	11.482f	4.960	9.719f	148.08	3076.84	741.325	26.686
9.690	136774.750	11.480f	4.965	9.714f	148.09	3077.22	740.614	26.669
9.700	136922.828	11.478f	4.970	9.709f	148.10	3077.60	739.904	26.652
9.710	137070.953	11.476f	4.975	9.705f	148.10	3077.98	739.196	26.636
9.720	137219.031	11.475f	4.980	9.700f	148.11	3078.36	738.489	26.619
9.730	137367.094	11.473f	4.985	9.695f	148.12	3078.74	737.784	26.603

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
9.740	137515.281	11.471f	4.991	9.690f	148.12	3079.12	737.080	26.587
9.750	137663.375	11.469f	4.996	9.686f	148.13	3079.50	736.378	26.570
9.760	137811.516	11.467f	5.001	9.681f	148.14	3079.88	735.677	26.554
9.770	137959.656	11.465f	5.006	9.676f	148.14	3080.26	734.978	26.538
9.780	138107.750	11.463f	5.011	9.671f	148.15	3080.64	734.281	26.521
9.790	138255.969	11.461f	5.016	9.667f	148.16	3081.02	733.584	26.505
9.800	138404.109	11.459f	5.021	9.662f	148.16	3081.40	732.889	26.489
9.810	138552.359	11.457f	5.026	9.657f	148.17	3081.78	732.195	26.473
9.820	138700.438	11.455f	5.031	9.652f	148.18	3082.17	731.504	26.457
9.830	138848.625	11.453f	5.037	9.647f	148.18	3082.55	730.814	26.441
9.840	138996.906	11.451f	5.042	9.643f	148.19	3082.93	730.124	26.425
9.850	139144.984	11.450f	5.047	9.638f	148.20	3083.31	729.437	26.409
9.860	139293.203	11.448f	5.052	9.633f	148.20	3083.69	728.751	26.393
9.870	139441.375	11.446f	5.057	9.628f	148.21	3084.07	728.066	26.378
9.880	139589.672	11.444f	5.062	9.624f	148.22	3084.45	727.383	26.362
9.890	139737.875	11.442f	5.067	9.619f	148.22	3084.83	726.701	26.346
9.900	139886.031	11.440f	5.072	9.614f	148.23	3085.21	726.021	26.330
9.910	140034.328	11.438f	5.077	9.609f	148.24	3085.59	725.342	26.315
9.920	140182.547	11.436f	5.083	9.604f	148.24	3085.98	724.665	26.299
9.930	140330.813	11.434f	5.088	9.600f	148.25	3086.36	723.989	26.284
9.940	140479.063	11.432f	5.093	9.595f	148.26	3086.74	723.315	26.268
9.950	140627.344	11.430f	5.098	9.590f	148.27	3087.13	722.642	26.253
9.960	140775.641	11.428f	5.103	9.585f	148.27	3087.51	721.970	26.237
9.970	140923.844	11.426f	5.108	9.580f	148.28	3087.89	721.300	26.222
9.980	141072.141	11.424f	5.113	9.576f	148.29	3088.27	720.632	26.207
9.990	141220.438	11.422f	5.118	9.571f	148.29	3088.66	719.965	26.191
10.000	141368.734	11.420f	5.124	9.566f	148.30	3089.04	719.298	26.176
10.010	141517.094	11.418f	5.129	9.560f	148.30	3089.41	718.630	26.161
10.020	141665.344	11.417f	5.134	9.554f	148.31	3089.78	717.964	26.145
10.030	141813.656	11.415f	5.139	9.547f	148.32	3090.15	717.298	26.130
10.040	141961.984	11.413f	5.144	9.541f	148.32	3090.52	716.634	26.114
10.050	142110.328	11.411f	5.149	9.535f	148.33	3090.88	715.971	26.099
10.060	142258.672	11.409f	5.154	9.528f	148.34	3091.25	715.310	26.084
10.070	142406.969	11.407f	5.159	9.522f	148.34	3091.61	714.649	26.068
10.080	142555.344	11.405f	5.164	9.516f	148.35	3091.98	713.990	26.053
10.090	142703.656	11.403f	5.170	9.509f	148.35	3092.35	713.332	26.038
10.100	142852.016	11.401f	5.175	9.503f	148.36	3092.71	712.675	26.023
10.110	143000.406	11.399f	5.180	9.497f	148.37	3093.08	712.020	26.008
10.120	143148.703	11.397f	5.185	9.491f	148.37	3093.44	711.367	25.992
10.130	143297.219	11.395f	5.190	9.484f	148.38	3093.81	710.714	25.977
10.140	143445.516	11.393f	5.195	9.478f	148.38	3094.17	710.063	25.962
10.150	143593.875	11.391f	5.200	9.472f	148.39	3094.54	709.413	25.947
10.160	143742.297	11.389f	5.205	9.465f	148.40	3094.91	708.764	25.933
10.170	143890.656	11.387f	5.211	9.459f	148.40	3095.27	708.117	25.918
10.180	144039.156	11.385f	5.216	9.453f	148.41	3095.64	707.471	25.903
10.190	144187.438	11.383f	5.221	9.446f	148.41	3096.01	706.827	25.888
10.200	144335.938	11.381f	5.226	9.440f	148.42	3096.37	706.183	25.873
10.210	144484.375	11.379f	5.231	9.434f	148.43	3096.74	705.541	25.859
10.220	144632.813	11.377f	5.236	9.427f	148.43	3097.10	704.900	25.844
10.230	144781.203	11.375f	5.241	9.421f	148.44	3097.47	704.261	25.829
10.240	144929.609	11.373f	5.246	9.415f	148.45	3097.84	703.623	25.815
10.250	145078.141	11.371f	5.251	9.409f	148.45	3098.20	702.986	25.800
10.260	145226.500	11.369f	5.257	9.402f	148.46	3098.57	702.351	25.786

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
10.270	145375.000	11.367f	5.262	9.396f	148.46	3098.94	701.717	25.771
10.280	145523.500	11.365f	5.267	9.390f	148.47	3099.30	701.083	25.757
10.290	145671.906	11.363f	5.272	9.383f	148.48	3099.67	700.452	25.742
10.300	145820.469	11.361f	5.277	9.377f	148.48	3100.03	699.820	25.728
10.310	145968.891	11.359f	5.282	9.371f	148.49	3100.40	699.191	25.714
10.320	146117.406	11.357f	5.287	9.364f	148.49	3100.76	698.562	25.700
10.330	146265.922	11.355f	5.292	9.358f	148.50	3101.12	697.935	25.685
10.340	146414.391	11.353f	5.297	9.352f	148.51	3101.49	697.309	25.671
10.350	146563.016	11.351f	5.303	9.345f	148.51	3101.85	696.683	25.657
10.360	146711.438	11.349f	5.308	9.339f	148.52	3102.22	696.060	25.643
10.370	146859.969	11.347f	5.313	9.333f	148.52	3102.58	695.438	25.629
10.380	147008.500	11.345f	5.318	9.326f	148.53	3102.95	694.817	25.615
10.390	147157.031	11.343f	5.323	9.320f	148.54	3103.31	694.198	25.601
10.400	147305.578	11.341f	5.328	9.314f	148.54	3103.68	693.579	25.587
10.410	147454.078	11.339f	5.333	9.308f	148.55	3104.04	692.962	25.573
10.420	147602.688	11.337f	5.338	9.301f	148.55	3104.40	692.345	25.559
10.430	147751.156	11.334f	5.343	9.295f	148.56	3104.77	691.731	25.545
10.440	147899.781	11.332f	5.349	9.289f	148.57	3105.13	691.117	25.531
10.450	148048.328	11.330f	5.354	9.282f	148.57	3105.50	690.505	25.518
10.460	148196.859	11.328f	5.359	9.276f	148.58	3105.86	689.894	25.504
10.470	148345.500	11.326f	5.364	9.270f	148.58	3106.23	689.283	25.490
10.480	148494.094	11.324f	5.369	9.263f	148.59	3106.59	688.674	25.476
10.490	148642.688	11.322f	5.374	9.257f	148.60	3106.96	688.067	25.463
10.500	148791.297	11.320f	5.379	9.251f	148.60	3107.33	687.461	25.449
10.510	148939.875	11.318f	5.384	9.245f	148.61	3107.73	686.865	25.436
10.520	149088.563	11.316f	5.390	9.238f	148.62	3108.07	686.255	25.422
10.530	149237.109	11.314f	5.395	9.232f	148.62	3108.44	685.653	25.409
10.540	149385.781	11.312f	5.400	9.226f	148.63	3108.81	685.051	25.395
10.550	149534.375	11.310f	5.405	9.219f	148.63	3109.17	684.451	25.382
10.560	149683.000	11.308f	5.410	9.213f	148.64	3109.54	683.852	25.369
10.570	149831.688	11.306f	5.415	9.207f	148.65	3109.91	683.254	25.355
10.580	149980.281	11.303f	5.420	9.201f	148.65	3110.27	682.658	25.342
10.590	150129.000	11.301f	5.425	9.194f	148.66	3110.64	682.062	25.329
10.600	150277.641	11.299f	5.430	9.188f	148.66	3111.01	681.468	25.315
10.610	150426.328	11.297f	5.436	9.182f	148.67	3111.38	680.875	25.302
10.620	150574.969	11.295f	5.441	9.176f	148.68	3111.74	680.283	25.289
10.630	150723.609	11.293f	5.446	9.169f	148.68	3112.11	679.693	25.276
10.640	150872.391	11.291f	5.451	9.163f	148.69	3112.48	679.103	25.263
10.650	151021.000	11.289f	5.456	9.157f	148.69	3112.85	678.515	25.250
10.660	151169.766	11.287f	5.461	9.151f	148.70	3113.22	677.927	25.237
10.670	151318.469	11.285f	5.466	9.144f	148.71	3113.58	677.341	25.224
10.680	151467.078	11.283f	5.471	9.138f	148.71	3113.95	676.756	25.211
10.690	151615.859	11.280f	5.476	9.132f	148.72	3114.32	676.172	25.198
10.700	151764.563	11.278f	5.482	9.125f	148.73	3114.69	675.589	25.185
10.710	151913.313	11.276f	5.487	9.119f	148.73	3115.05	675.007	25.172
10.720	152062.047	11.274f	5.492	9.113f	148.74	3115.42	674.427	25.160
10.730	152210.766	11.272f	5.497	9.107f	148.74	3115.79	673.848	25.147
10.740	152359.547	11.270f	5.502	9.100f	148.75	3116.16	673.269	25.134
10.750	152508.266	11.268f	5.507	9.094f	148.76	3116.53	672.692	25.122
10.760	152657.078	11.266f	5.512	9.088f	148.76	3116.90	672.116	25.109
10.770	152805.813	11.264f	5.517	9.082f	148.77	3117.26	671.541	25.096
10.780	152954.609	11.261f	5.522	9.075f	148.77	3117.63	670.967	25.084
10.790	153103.406	11.259f	5.528	9.069f	148.78	3118.00	670.394	25.071

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
10.800	153252.125	11.257f	5.533	9.063f	148.79	3118.37	669.822	25.059
10.810	153400.969	11.255f	5.538	9.057f	148.79	3118.73	669.251	25.046
10.820	153549.719	11.253f	5.543	9.050f	148.80	3119.10	668.681	25.034
10.830	153698.500	11.251f	5.548	9.044f	148.80	3119.47	668.112	25.021
10.840	153847.375	11.249f	5.553	9.038f	148.81	3119.83	667.544	25.009
10.850	153996.094	11.246f	5.558	9.032f	148.82	3120.20	666.978	24.997
10.860	154144.984	11.244f	5.563	9.025f	148.82	3120.57	666.413	24.984
10.870	154293.781	11.242f	5.569	9.019f	148.83	3120.94	665.848	24.972
10.880	154442.578	11.240f	5.574	9.013f	148.83	3121.31	665.285	24.960
10.890	154591.453	11.238f	5.579	9.007f	148.84	3121.67	664.723	24.948
10.900	154740.297	11.236f	5.584	9.000f	148.85	3122.04	664.162	24.935
10.910	154889.188	11.234f	5.589	8.994f	148.85	3122.41	663.601	24.923
10.920	155038.000	11.231f	5.594	8.988f	148.86	3122.78	663.043	24.911
10.930	155186.938	11.229f	5.599	8.982f	148.87	3123.15	662.485	24.899
10.940	155335.719	11.227f	5.604	8.975f	148.87	3123.51	661.928	24.887
10.950	155484.625	11.225f	5.609	8.969f	148.88	3123.88	661.371	24.875
10.960	155633.500	11.223f	5.615	8.963f	148.88	3124.25	660.816	24.863
10.970	155782.391	11.221f	5.620	8.956f	148.89	3124.61	660.263	24.851
10.980	155931.281	11.218f	5.625	8.950f	148.90	3124.98	659.709	24.839
10.990	156080.141	11.216f	5.630	8.944f	148.90	3125.35	659.157	24.827
11.000	156229.078	11.214f	5.635	8.938f	148.91	3125.71	658.606	24.815
11.010	156378.094	11.212f	5.640	8.931f	148.91	3126.10	658.061	24.804
11.020	156526.891	11.210f	5.645	8.924f	148.92	3126.49	657.517	24.792
11.030	156675.875	11.208f	5.650	8.917f	148.93	3126.88	656.974	24.780
11.040	156824.766	11.205f	5.655	8.910f	148.93	3127.27	656.431	24.768
11.050	156973.750	11.203f	5.661	8.904f	148.94	3127.66	655.890	24.757
11.060	157122.641	11.201f	5.666	8.897f	148.95	3128.05	655.350	24.745
11.070	157271.563	11.199f	5.671	8.890f	148.95	3128.44	654.811	24.733
11.080	157420.578	11.197f	5.676	8.883f	148.96	3128.83	654.274	24.722
11.090	157569.547	11.194f	5.681	8.876f	148.97	3129.23	653.738	24.710
11.100	157718.547	11.192f	5.686	8.869f	148.97	3129.63	653.204	24.699
11.110	157867.484	11.190f	5.691	8.862f	148.98	3130.03	652.670	24.687
11.120	158016.484	11.188f	5.696	8.855f	148.99	3130.43	652.139	24.676
11.130	158165.469	11.186f	5.701	8.848f	148.99	3130.83	651.608	24.664
11.140	158314.438	11.183f	5.707	8.841f	149.00	3131.23	651.079	24.653
11.150	158463.438	11.181f	5.712	8.834f	149.00	3131.64	650.550	24.642
11.160	158612.422	11.179f	5.717	8.827f	149.01	3132.04	650.023	24.630
11.170	158761.469	11.177f	5.722	8.820f	149.02	3132.44	649.497	24.619
11.180	158910.563	11.175f	5.727	8.812f	149.02	3132.85	648.971	24.608
11.190	159059.453	11.172f	5.732	8.805f	149.03	3133.26	648.448	24.596
11.200	159208.578	11.170f	5.737	8.798f	149.04	3133.66	647.925	24.585
11.210	159357.594	11.168f	5.742	8.791f	149.04	3134.07	647.403	24.574
11.220	159506.625	11.166f	5.748	8.784f	149.05	3134.47	646.881	24.563
11.230	159655.703	11.164f	5.753	8.777f	149.06	3134.88	646.360	24.552
11.240	159804.688	11.161f	5.758	8.769f	149.06	3135.28	645.840	24.541
11.250	159953.844	11.159f	5.763	8.762f	149.07	3135.68	645.320	24.530
11.260	160102.906	11.157f	5.768	8.755f	149.08	3136.08	644.802	24.519
11.270	160252.016	11.155f	5.773	8.748f	149.08	3136.48	644.284	24.508
11.280	160401.063	11.152f	5.778	8.741f	149.09	3136.88	643.768	24.497
11.290	160550.094	11.150f	5.783	8.733f	149.10	3137.28	643.253	24.486
11.300	160699.281	11.148f	5.788	8.726f	149.10	3137.68	642.738	24.475
11.310	160848.359	11.146f	5.794	8.719f	149.11	3138.08	642.224	24.464
11.320	160997.484	11.143f	5.799	8.712f	149.12	3138.48	641.711	24.453

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
11.330	161146.609	11.141f	5.804	8.705f	149.12	3138.89	641.199	24.442
11.340	161295.688	11.139f	5.809	8.697f	149.13	3139.29	640.688	24.431
11.350	161444.828	11.137f	5.814	8.690f	149.14	3139.69	640.178	24.421
11.360	161593.953	11.134f	5.819	8.683f	149.14	3140.09	639.669	24.410
11.370	161743.141	11.132f	5.824	8.676f	149.15	3140.49	639.161	24.399
11.380	161892.250	11.130f	5.829	8.669f	149.16	3140.89	638.654	24.389
11.390	162041.453	11.128f	5.834	8.661f	149.16	3141.29	638.147	24.378
11.400	162190.641	11.125f	5.840	8.654f	149.17	3141.69	637.641	24.367
11.410	162339.781	11.123f	5.845	8.647f	149.17	3142.09	637.137	24.357
11.420	162489.000	11.121f	5.850	8.640f	149.18	3142.49	636.633	24.346
11.430	162638.109	11.118f	5.855	8.633f	149.19	3142.90	636.131	24.336
11.440	162787.344	11.116f	5.860	8.626f	149.19	3143.30	635.628	24.325
11.450	162936.547	11.114f	5.865	8.618f	149.20	3143.70	635.127	24.315
11.460	163085.703	11.112f	5.870	8.611f	149.21	3144.11	634.629	24.304
11.470	163234.953	11.109f	5.875	8.604f	149.21	3144.52	634.132	24.294
11.480	163384.125	11.107f	5.880	8.597f	149.22	3144.93	633.635	24.283
11.490	163533.438	11.105f	5.886	8.590f	149.23	3145.34	633.140	24.273
11.500	163682.641	11.102f	5.891	8.583f	149.23	3145.75	632.645	24.263
11.510	163831.828	11.100f	5.896	8.576f	149.24	3146.16	632.152	24.252
11.520	163981.094	11.098f	5.901	8.569f	149.25	3146.57	631.659	24.242
11.530	164130.297	11.096f	5.906	8.562f	149.25	3146.98	631.167	24.232
11.540	164279.625	11.093f	5.911	8.555f	149.26	3147.39	630.676	24.222
11.550	164428.828	11.091f	5.916	8.548f	149.27	3147.80	630.185	24.211
11.560	164578.141	11.089f	5.921	8.541f	149.27	3148.21	629.696	24.201
11.570	164727.391	11.086f	5.927	8.534f	149.28	3148.62	629.207	24.191
11.580	164876.641	11.084f	5.932	8.527f	149.29	3149.04	628.720	24.181
11.590	165026.000	11.082f	5.937	8.520f	149.29	3149.45	628.233	24.171
11.600	165175.281	11.079f	5.942	8.513f	149.30	3149.86	627.747	24.161
11.610	165324.609	11.077f	5.947	8.506f	149.31	3150.27	627.262	24.151
11.620	165473.891	11.075f	5.952	8.499f	149.31	3150.68	626.778	24.141
11.630	165623.125	11.072f	5.957	8.491f	149.32	3151.09	626.294	24.131
11.640	165772.563	11.070f	5.962	8.484f	149.33	3151.50	625.811	24.121
11.650	165921.891	11.068f	5.967	8.477f	149.33	3151.91	625.330	24.111
11.660	166071.172	11.065f	5.973	8.470f	149.34	3152.32	624.849	24.101
11.670	166220.547	11.063f	5.978	8.463f	149.35	3152.73	624.369	24.091
11.680	166369.828	11.061f	5.983	8.456f	149.35	3153.15	623.891	24.081
11.690	166519.266	11.058f	5.988	8.449f	149.36	3153.57	623.414	24.071
11.700	166668.594	11.056f	5.993	8.442f	149.37	3153.99	622.938	24.062
11.710	166818.000	11.054f	5.998	8.435f	149.37	3154.41	622.464	24.052
11.720	166967.359	11.051f	6.003	8.428f	149.38	3154.83	621.990	24.042
11.730	167116.766	11.049f	6.008	8.420f	149.39	3155.25	621.517	24.032
11.740	167266.125	11.047f	6.013	8.413f	149.39	3155.68	621.045	24.023
11.750	167415.469	11.044f	6.019	8.406f	149.40	3156.10	620.574	24.013
11.760	167564.969	11.042f	6.024	8.399f	149.41	3156.52	620.103	24.004
11.770	167714.313	11.040f	6.029	8.392f	149.41	3156.94	619.633	23.994
11.780	167863.750	11.037f	6.034	8.384f	149.42	3157.36	619.164	23.984
11.790	168013.203	11.035f	6.039	8.377f	149.43	3157.78	618.696	23.975
11.800	168162.641	11.032f	6.044	8.370f	149.43	3158.20	618.229	23.965
11.810	168312.125	11.030f	6.049	8.363f	149.44	3158.62	617.762	23.956
11.820	168461.516	11.028f	6.054	8.356f	149.45	3159.05	617.297	23.946
11.830	168610.969	11.025f	6.060	8.349f	149.46	3159.47	616.832	23.937
11.840	168760.469	11.023f	6.065	8.341f	149.46	3159.89	616.367	23.927
11.850	168909.891	11.021f	6.070	8.334f	149.47	3160.31	615.904	23.918

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
11.860	169059.359	11.018f	6.075	8.327f	149.48	3160.73	615.442	23.909
11.870	169208.828	11.016f	6.080	8.320f	149.48	3161.15	614.980	23.899
11.880	169358.344	11.013f	6.085	8.313f	149.49	3161.57	614.519	23.890
11.890	169507.828	11.011f	6.090	8.306f	149.50	3162.00	614.059	23.881
11.900	169657.328	11.009f	6.095	8.298f	149.50	3162.42	613.600	23.871
11.910	169806.797	11.006f	6.100	8.291f	149.51	3162.84	613.141	23.862
11.920	169956.313	11.004f	6.106	8.284f	149.52	3163.26	612.683	23.853
11.930	170105.891	11.002f	6.111	8.277f	149.52	3163.68	612.226	23.844
11.940	170255.406	10.999f	6.116	8.270f	149.53	3164.10	611.770	23.835
11.950	170404.922	10.997f	6.121	8.263f	149.54	3164.52	611.315	23.825
11.960	170554.453	10.994f	6.126	8.255f	149.54	3164.94	610.860	23.816
11.970	170703.953	10.992f	6.131	8.248f	149.55	3165.37	610.406	23.807
11.980	170853.594	10.990f	6.136	8.241f	149.56	3165.79	609.953	23.798
11.990	171003.141	10.987f	6.141	8.234f	149.56	3166.21	609.501	23.789
12.000	171152.766	10.985f	6.146	8.227f	149.57	3166.63	609.049	23.780
12.010	171302.344	10.982f	6.152	8.218f	149.58	3167.08	608.604	23.771
12.020	171451.813	10.980f	6.157	8.210f	149.58	3167.54	608.161	23.762
12.030	171601.453	10.977f	6.162	8.201f	149.59	3167.99	607.717	23.753
12.040	171751.016	10.975f	6.167	8.193f	149.60	3168.45	607.275	23.744
12.050	171900.688	10.973f	6.172	8.184f	149.61	3168.90	606.833	23.735
12.060	172050.250	10.970f	6.177	8.175f	149.61	3169.35	606.392	23.726
12.070	172199.797	10.968f	6.182	8.167f	149.62	3169.81	605.953	23.717
12.080	172349.422	10.965f	6.187	8.158f	149.63	3170.26	605.513	23.708
12.090	172499.063	10.963f	6.193	8.150f	149.63	3170.71	605.074	23.699
12.100	172648.828	10.960f	6.198	8.141f	149.64	3171.17	604.636	23.690
12.110	172798.328	10.958f	6.203	8.132f	149.65	3171.62	604.199	23.681
12.120	172948.047	10.956f	6.208	8.124f	149.65	3172.07	603.763	23.672
12.130	173097.750	10.953f	6.213	8.115f	149.66	3172.53	603.327	23.664
12.140	173247.344	10.951f	6.218	8.107f	149.67	3172.98	602.892	23.655
12.150	173397.094	10.948f	6.223	8.098f	149.68	3173.43	602.457	23.646
12.160	173546.734	10.946f	6.228	8.090f	149.68	3173.89	602.024	23.637
12.170	173696.391	10.943f	6.233	8.081f	149.69	3174.34	601.591	23.628
12.180	173846.141	10.941f	6.239	8.072f	149.70	3174.79	601.159	23.620
12.190	173995.750	10.938f	6.244	8.064f	149.70	3175.25	600.728	23.611
12.200	174145.500	10.936f	6.249	8.055f	149.71	3175.70	600.297	23.602
12.210	174295.234	10.933f	6.254	8.047f	149.72	3176.15	599.867	23.594
12.220	174444.953	10.931f	6.259	8.038f	149.72	3176.61	599.437	23.585
12.230	174594.641	10.928f	6.264	8.030f	149.73	3177.06	599.009	23.577
12.240	174744.359	10.926f	6.269	8.021f	149.74	3177.51	598.581	23.568
12.250	174894.094	10.923f	6.274	8.012f	149.75	3177.97	598.154	23.560
12.260	175043.813	10.921f	6.279	8.004f	149.75	3178.42	597.728	23.551
12.270	175193.688	10.918f	6.285	7.995f	149.76	3178.88	597.302	23.543
12.280	175343.359	10.916f	6.290	7.987f	149.77	3179.33	596.877	23.534
12.290	175493.125	10.913f	6.295	7.978f	149.77	3179.79	596.453	23.526
12.300	175642.922	10.911f	6.300	7.969f	149.78	3180.23	596.028	23.517
12.310	175792.750	10.908f	6.305	7.961f	149.79	3180.67	595.602	23.509
12.320	175942.484	10.906f	6.310	7.952f	149.79	3181.11	595.178	23.500
12.330	176092.281	10.903f	6.315	7.943f	149.80	3181.55	594.754	23.492
12.340	176242.203	10.901f	6.320	7.934f	149.81	3181.99	594.330	23.484
12.350	176391.938	10.898f	6.326	7.925f	149.81	3182.43	593.908	23.475
12.360	176541.766	10.896f	6.331	7.917f	149.82	3182.87	593.486	23.467
12.370	176691.578	10.893f	6.336	7.908f	149.83	3183.32	593.066	23.459
12.380	176841.375	10.891f	6.341	7.899f	149.84	3183.77	592.647	23.451

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
12.390	176991.266	10.888f	6.346	7.890f	149.84	3184.21	592.228	23.442
12.400	177141.063	10.886f	6.351	7.881f	149.85	3184.66	591.810	23.434
12.410	177290.906	10.883f	6.356	7.872f	149.86	3185.10	591.392	23.426
12.420	177440.781	10.881f	6.361	7.864f	149.86	3185.55	590.975	23.418
12.430	177590.641	10.878f	6.366	7.855f	149.87	3185.99	590.559	23.410
12.440	177740.609	10.875f	6.372	7.846f	149.88	3186.44	590.144	23.402
12.450	177890.438	10.873f	6.377	7.837f	149.88	3186.88	589.729	23.394
12.460	178040.266	10.870f	6.382	7.829f	149.89	3187.35	589.320	23.386
12.470	178190.203	10.868f	6.387	7.820f	149.90	3187.82	588.910	23.378
12.480	178340.109	10.865f	6.392	7.812f	149.90	3188.29	588.502	23.370
12.490	178490.063	10.863f	6.397	7.803f	149.91	3188.76	588.094	23.362
12.500	178639.906	10.860f	6.402	7.795f	149.92	3189.23	587.687	23.354
12.510	178789.875	10.858f	6.407	7.786f	149.93	3189.70	587.281	23.346
12.520	178939.813	10.855f	6.413	7.777f	149.93	3190.17	586.875	23.338
12.530	179089.688	10.852f	6.418	7.769f	149.94	3190.64	586.471	23.330
12.540	179239.656	10.850f	6.423	7.760f	149.95	3191.12	586.067	23.322
12.550	179389.625	10.847f	6.428	7.752f	149.96	3191.59	585.663	23.314
12.560	179539.594	10.845f	6.433	7.743f	149.96	3192.06	585.261	23.306
12.570	179689.500	10.842f	6.438	7.735f	149.97	3192.53	584.860	23.298
12.580	179839.453	10.839f	6.443	7.726f	149.98	3193.01	584.459	23.291
12.590	179989.500	10.837f	6.448	7.718f	149.98	3193.49	584.059	23.283
12.600	180139.484	10.834f	6.453	7.709f	149.99	3193.96	583.659	23.275
12.610	180289.469	10.832f	6.459	7.700f	150.00	3194.44	583.260	23.267
12.620	180439.438	10.829f	6.464	7.692f	150.01	3194.91	582.862	23.260
12.630	180589.484	10.826f	6.469	7.683f	150.01	3195.39	582.465	23.252
12.640	180739.531	10.824f	6.474	7.675f	150.02	3195.86	582.068	23.244
12.650	180889.484	10.821f	6.479	7.666f	150.03	3196.34	581.672	23.237
12.660	181039.531	10.819f	6.484	7.657f	150.04	3196.81	581.276	23.229
12.670	181189.594	10.816f	6.489	7.649f	150.04	3197.29	580.881	23.222
12.680	181339.719	10.813f	6.494	7.640f	150.05	3197.76	580.486	23.214
12.690	181489.703	10.811f	6.500	7.632f	150.06	3198.24	580.093	23.206
12.700	181639.734	10.808f	6.505	7.623f	150.06	3198.71	579.700	23.199
12.710	181789.828	10.805f	6.510	7.615f	150.07	3199.19	579.308	23.191
12.720	181939.906	10.803f	6.515	7.606f	150.08	3199.67	578.916	23.184
12.730	182090.016	10.800f	6.520	7.597f	150.09	3200.14	578.525	23.176
12.740	182240.125	10.798f	6.525	7.589f	150.09	3200.62	578.134	23.169
12.750	182390.125	10.795f	6.530	7.580f	150.10	3201.09	577.744	23.161
12.760	182540.281	10.792f	6.535	7.572f	150.11	3201.57	577.355	23.154
12.770	182690.422	10.790f	6.541	7.563f	150.12	3202.05	576.967	23.147
12.780	182840.563	10.787f	6.546	7.554f	150.12	3202.53	576.579	23.139
12.790	182990.641	10.784f	6.551	7.546f	150.13	3203.01	576.193	23.132
12.800	183140.750	10.782f	6.556	7.537f	150.14	3203.49	575.807	23.125
12.810	183290.938	10.779f	6.561	7.528f	150.14	3203.97	575.421	23.117
12.820	183441.094	10.776f	6.566	7.520f	150.15	3204.45	575.036	23.110
12.830	183591.297	10.774f	6.571	7.511f	150.16	3204.93	574.652	23.103
12.840	183741.344	10.771f	6.576	7.502f	150.17	3205.41	574.268	23.096
12.850	183891.547	10.768f	6.581	7.494f	150.17	3205.89	573.885	23.088
12.860	184041.766	10.766f	6.587	7.485f	150.18	3206.37	573.503	23.081
12.870	184191.906	10.763f	6.592	7.477f	150.19	3206.85	573.121	23.074
12.880	184342.172	10.760f	6.597	7.468f	150.20	3207.33	572.740	23.067
12.890	184492.313	10.758f	6.602	7.459f	150.20	3207.81	572.359	23.060
12.900	184642.469	10.755f	6.607	7.450f	150.21	3208.28	571.978	23.052
12.910	184792.797	10.752f	6.612	7.442f	150.22	3208.75	571.596	23.045

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
12.920	184942.906	10.749f	6.617	7.433f	150.23	3209.22	571.216	23.038
12.930	185093.250	10.747f	6.622	7.424f	150.23	3209.69	570.835	23.031
12.940	185243.453	10.744f	6.628	7.415f	150.24	3210.16	570.456	23.024
12.950	185393.656	10.741f	6.633	7.407f	150.25	3210.63	570.077	23.017
12.960	185543.922	10.739f	6.638	7.398f	150.25	3211.10	569.699	23.010
12.970	185694.188	10.736f	6.643	7.389f	150.26	3211.59	569.325	23.003
12.980	185844.469	10.733f	6.648	7.380f	150.27	3212.08	568.952	22.996
12.990	185994.719	10.731f	6.653	7.370f	150.28	3212.58	568.581	22.989
13.000	186145.047	10.728f	6.658	7.361f	150.28	3213.08	568.210	22.982
13.010	186295.328	10.725f	6.663	7.352f	150.29	3213.61	567.845	22.975
13.020	186445.609	10.722f	6.669	7.342f	150.30	3214.14	567.481	22.969
13.030	186595.969	10.720f	6.674	7.333f	150.31	3214.67	567.117	22.962
13.040	186746.188	10.717f	6.679	7.323f	150.32	3215.20	566.754	22.955
13.050	186896.547	10.714f	6.684	7.313f	150.32	3215.73	566.392	22.948
13.060	187046.844	10.711f	6.689	7.304f	150.33	3216.26	566.030	22.941
13.070	187197.172	10.709f	6.694	7.294f	150.34	3216.79	565.669	22.934
13.080	187347.563	10.706f	6.699	7.284f	150.35	3217.34	565.311	22.928
13.090	187497.813	10.703f	6.704	7.274f	150.36	3217.89	564.955	22.921
13.100	187648.219	10.700f	6.709	7.264f	150.36	3218.44	564.599	22.914
13.110	187798.594	10.698f	6.715	7.254f	150.37	3219.00	564.245	22.908
13.120	187949.031	10.695f	6.720	7.243f	150.38	3219.56	563.892	22.901
13.130	188099.438	10.692f	6.725	7.233f	150.39	3220.14	563.541	22.894
13.140	188249.734	10.689f	6.730	7.223f	150.40	3220.71	563.191	22.888
13.150	188400.078	10.687f	6.735	7.212f	150.41	3221.28	562.841	22.881
13.160	188550.578	10.684f	6.740	7.202f	150.42	3221.85	562.491	22.874
13.170	188701.063	10.681f	6.745	7.192f	150.42	3222.42	562.142	22.868
13.180	188851.422	10.678f	6.750	7.182f	150.43	3222.99	561.794	22.861
13.190	189001.875	10.676f	6.756	7.171f	150.44	3223.56	561.446	22.855
13.200	189152.250	10.673f	6.761	7.161f	150.45	3224.13	561.099	22.848
13.210	189302.734	10.670f	6.766	7.151f	150.46	3224.70	560.752	22.842
13.220	189453.281	10.667f	6.771	7.140f	150.47	3225.27	560.406	22.835
13.230	189603.656	10.664f	6.776	7.130f	150.47	3225.84	560.060	22.829
13.240	189754.156	10.662f	6.781	7.120f	150.48	3226.41	559.715	22.822
13.250	189904.672	10.659f	6.786	7.109f	150.49	3226.98	559.370	22.816
13.260	190055.156	10.656f	6.791	7.099f	150.50	3227.57	559.029	22.809
13.270	190205.703	10.653f	6.797	7.089f	150.51	3228.15	558.688	22.803
13.280	190356.156	10.650f	6.802	7.079f	150.52	3228.74	558.348	22.797
13.290	190506.656	10.647f	6.807	7.069f	150.53	3229.33	558.008	22.790
13.300	190657.250	10.645f	6.812	7.059f	150.54	3229.92	557.669	22.784
13.310	190807.844	10.642f	6.817	7.049f	150.54	3230.50	557.331	22.778
13.320	190958.375	10.639f	6.822	7.038f	150.55	3231.09	556.992	22.771
13.330	191108.891	10.636f	6.827	7.028f	150.56	3231.68	556.655	22.765
13.340	191259.422	10.633f	6.832	7.018f	150.57	3232.27	556.319	22.759
13.350	191410.063	10.630f	6.838	7.008f	150.58	3232.86	555.982	22.752
13.360	191560.578	10.628f	6.843	6.998f	150.59	3233.45	555.646	22.746
13.370	191711.188	10.625f	6.848	6.988f	150.60	3234.03	555.311	22.740
13.380	191861.766	10.622f	6.853	6.978f	150.61	3234.62	554.976	22.734
13.390	192012.406	10.619f	6.858	6.968f	150.61	3235.21	554.641	22.728
13.400	192163.016	10.616f	6.863	6.957f	150.62	3235.80	554.307	22.721
13.410	192313.672	10.613f	6.868	6.947f	150.63	3236.39	553.974	22.715
13.420	192464.219	10.610f	6.873	6.937f	150.64	3236.98	553.641	22.709
13.430	192614.891	10.607f	6.879	6.927f	150.65	3237.56	553.308	22.703
13.440	192765.578	10.605f	6.884	6.917f	150.66	3238.15	552.976	22.697

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
13.450	192916.234	10.602f	6.889	6.907f	150.67	3238.74	552.645	22.691
13.460	193066.938	10.599f	6.894	6.897f	150.67	3239.33	552.314	22.685
13.470	193217.563	10.596f	6.899	6.887f	150.68	3239.92	551.983	22.679
13.480	193368.219	10.593f	6.904	6.876f	150.69	3240.50	551.653	22.673
13.490	193518.984	10.590f	6.909	6.866f	150.70	3241.09	551.322	22.667
13.500	193669.703	10.587f	6.914	6.856f	150.71	3241.67	550.992	22.661
13.510	193820.484	10.584f	6.920	6.846f	150.72	3242.25	550.663	22.655
13.520	193971.125	10.581f	6.925	6.836f	150.73	3242.83	550.334	22.649
13.530	194121.797	10.579f	6.930	6.826f	150.74	3243.41	550.005	22.643
13.540	194272.563	10.576f	6.935	6.815f	150.74	3244.00	549.677	22.637
13.550	194423.313	10.573f	6.940	6.805f	150.75	3244.58	549.349	22.631
13.560	194574.141	10.570f	6.945	6.795f	150.76	3245.16	549.023	22.625
13.570	194724.875	10.567f	6.950	6.785f	150.77	3245.75	548.697	22.619
13.580	194875.609	10.564f	6.955	6.775f	150.78	3246.33	548.371	22.614
13.590	195026.438	10.561f	6.961	6.764f	150.79	3246.92	548.045	22.608
13.600	195177.172	10.558f	6.966	6.754f	150.80	3247.50	547.721	22.602
13.610	195328.031	10.555f	6.971	6.744f	150.81	3248.09	547.396	22.596
13.620	195478.813	10.552f	6.976	6.734f	150.81	3248.67	547.072	22.590
13.630	195629.609	10.549f	6.981	6.723f	150.82	3249.26	546.749	22.585
13.640	195780.438	10.546f	6.986	6.713f	150.83	3249.84	546.426	22.579
13.650	195931.266	10.543f	6.991	6.703f	150.84	3250.43	546.104	22.573
13.660	196082.188	10.540f	6.996	6.693f	150.85	3251.01	545.782	22.567
13.670	196233.016	10.537f	7.002	6.683f	150.86	3251.59	545.460	22.562
13.680	196383.844	10.534f	7.007	6.672f	150.87	3252.23	545.148	22.556
13.690	196534.766	10.531f	7.012	6.661f	150.88	3252.87	544.837	22.550
13.700	196685.672	10.528f	7.017	6.650f	150.89	3253.51	544.526	22.545
13.710	196836.563	10.525f	7.022	6.639f	150.89	3254.15	544.215	22.539
13.720	196987.375	10.523f	7.027	6.628f	150.90	3254.79	543.905	22.534
13.730	197138.297	10.520f	7.032	6.617f	150.91	3255.43	543.596	22.528
13.740	197289.203	10.517f	7.037	6.606f	150.92	3256.07	543.286	22.522
13.750	197440.234	10.514f	7.043	6.595f	150.93	3256.71	542.977	22.517
13.760	197591.188	10.511f	7.048	6.584f	150.94	3257.35	542.669	22.511
13.770	197741.984	10.508f	7.053	6.574f	150.95	3257.99	542.362	22.506
13.780	197892.984	10.505f	7.058	6.563f	150.96	3258.62	542.054	22.500
13.790	198043.953	10.502f	7.063	6.552f	150.97	3259.26	541.747	22.495
13.800	198194.922	10.499f	7.068	6.541f	150.98	3259.90	541.440	22.489
13.810	198346.000	10.496f	7.073	6.530f	150.99	3260.54	541.134	22.484
13.820	198496.859	10.492f	7.078	6.519f	151.00	3261.18	540.828	22.478
13.830	198647.906	10.489f	7.084	6.508f	151.01	3261.82	540.523	22.473
13.840	198798.891	10.486f	7.089	6.497f	151.02	3262.45	540.218	22.468
13.850	198949.938	10.483f	7.094	6.486f	151.03	3263.09	539.914	22.462
13.860	199100.984	10.480f	7.099	6.475f	151.03	3263.73	539.610	22.457
13.870	199251.969	10.477f	7.104	6.465f	151.04	3264.37	539.306	22.451
13.880	199403.000	10.474f	7.109	6.454f	151.05	3265.01	539.003	22.446
13.890	199554.172	10.471f	7.114	6.443f	151.06	3265.64	538.700	22.441
13.900	199705.234	10.468f	7.120	6.432f	151.07	3266.28	538.398	22.435
13.910	199856.281	10.465f	7.125	6.421f	151.08	3266.92	538.096	22.430
13.920	200007.375	10.462f	7.130	6.410f	151.09	3267.56	537.794	22.425
13.930	200158.469	10.459f	7.135	6.399f	151.10	3268.20	537.493	22.420
13.940	200309.500	10.456f	7.140	6.388f	151.11	3268.83	537.193	22.414
13.950	200460.734	10.453f	7.145	6.377f	151.12	3269.47	536.892	22.409
13.960	200611.766	10.450f	7.150	6.367f	151.13	3270.11	536.592	22.404
13.970	200762.891	10.447f	7.155	6.356f	151.14	3270.75	536.293	22.399

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
13.980	200914.109	10.444f	7.161	6.345f	151.15	3271.38	535.994	22.394
13.990	201065.203	10.441f	7.166	6.334f	151.16	3272.02	535.695	22.388
14.000	201216.406	10.437f	7.171	6.323f	151.17	3272.66	535.397	22.383
14.010	201367.516	10.434f	7.176	6.311f	151.18	3273.35	535.109	22.378
14.020	201518.750	10.431f	7.181	6.299f	151.19	3274.04	534.820	22.373
14.030	201669.922	10.428f	7.186	6.288f	151.19	3274.74	534.532	22.367
14.040	201821.109	10.425f	7.191	6.276f	151.20	3275.43	534.245	22.362
14.050	201972.375	10.422f	7.196	6.264f	151.21	3276.12	533.957	22.357
14.060	202123.516	10.419f	7.202	6.252f	151.22	3276.81	533.671	22.352
14.070	202274.781	10.416f	7.207	6.240f	151.23	3277.50	533.384	22.347
14.080	202426.016	10.413f	7.212	6.228f	151.24	3278.21	533.101	22.342
14.090	202577.344	10.409f	7.217	6.216f	151.25	3278.93	532.820	22.337
14.100	202728.516	10.406f	7.222	6.204f	151.26	3279.65	532.540	22.331
14.110	202879.766	10.403f	7.227	6.191f	151.27	3280.38	532.260	22.326
14.120	203031.047	10.400f	7.232	6.179f	151.29	3281.10	531.980	22.321
14.130	203182.391	10.397f	7.238	6.167f	151.30	3281.82	531.701	22.316
14.140	203333.641	10.394f	7.243	6.155f	151.31	3282.54	531.422	22.311
14.150	203484.969	10.391f	7.248	6.143f	151.32	3283.26	531.144	22.306
14.160	203636.281	10.387f	7.253	6.130f	151.33	3283.98	530.866	22.301
14.170	203787.625	10.384f	7.258	6.118f	151.34	3284.72	530.590	22.296
14.180	203939.000	10.381f	7.263	6.106f	151.35	3285.45	530.314	22.291
14.190	204090.344	10.378f	7.268	6.093f	151.36	3286.18	530.039	22.286
14.200	204241.672	10.375f	7.273	6.081f	151.37	3286.92	529.765	22.281
14.210	204392.984	10.372f	7.279	6.068f	151.38	3287.65	529.490	22.276
14.220	204544.422	10.368f	7.284	6.056f	151.39	3288.38	529.216	22.271
14.230	204695.828	10.365f	7.289	6.044f	151.40	3289.12	528.944	22.266
14.240	204847.266	10.362f	7.294	6.031f	151.41	3289.87	528.673	22.262
14.250	204998.656	10.359f	7.299	6.018f	151.42	3290.62	528.403	22.257
14.260	205150.031	10.356f	7.304	6.006f	151.43	3291.37	528.133	22.252
14.270	205301.438	10.352f	7.309	5.993f	151.44	3292.12	527.864	22.247
14.280	205452.891	10.349f	7.315	5.981f	151.45	3292.87	527.595	22.242
14.290	205604.453	10.346f	7.320	5.968f	151.46	3293.62	527.326	22.237
14.300	205755.797	10.343f	7.325	5.956f	151.47	3294.37	527.058	22.232
14.310	205907.328	10.339f	7.330	5.943f	151.48	3295.12	526.790	22.228
14.320	206058.734	10.336f	7.335	5.930f	151.49	3295.87	526.523	22.223
14.330	206210.328	10.333f	7.340	5.918f	151.50	3296.61	526.255	22.218
14.340	206361.938	10.330f	7.345	5.905f	151.51	3297.36	525.988	22.213
14.350	206513.328	10.326f	7.351	5.893f	151.52	3298.11	525.722	22.209
14.360	206664.844	10.323f	7.356	5.880f	151.53	3298.86	525.456	22.204
14.370	206816.453	10.320f	7.361	5.868f	151.55	3299.61	525.190	22.199
14.380	206968.016	10.317f	7.366	5.855f	151.56	3300.36	524.924	22.195
14.390	207119.656	10.313f	7.371	5.842f	151.57	3301.14	524.665	22.190
14.400	207271.094	10.310f	7.376	5.829f	151.58	3301.93	524.406	22.185
14.410	207422.703	10.307f	7.381	5.816f	151.59	3302.71	524.147	22.181
14.420	207574.328	10.304f	7.386	5.803f	151.60	3303.50	523.889	22.176
14.430	207726.000	10.300f	7.392	5.790f	151.61	3304.28	523.630	22.171
14.440	207877.609	10.297f	7.397	5.777f	151.62	3305.06	523.373	22.167
14.450	208029.063	10.294f	7.402	5.764f	151.63	3305.85	523.116	22.162
14.460	208180.781	10.290f	7.407	5.751f	151.64	3306.63	522.858	22.158
14.470	208332.469	10.287f	7.412	5.738f	151.65	3307.42	522.602	22.153
14.480	208484.094	10.284f	7.417	5.725f	151.67	3308.20	522.345	22.149
14.490	208635.766	10.280f	7.422	5.712f	151.68	3308.98	522.089	22.144
14.500	208787.438	10.277f	7.428	5.699f	151.69	3309.77	521.833	22.140

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
14.510	208939.125	10.274f	7.433	5.686f	151.70	3310.55	521.578	22.135
14.520	209090.859	10.270f	7.438	5.673f	151.71	3311.33	521.323	22.131
14.530	209242.609	10.267f	7.443	5.660f	151.72	3312.12	521.068	22.126
14.540	209394.281	10.264f	7.448	5.647f	151.73	3312.90	520.813	22.122
14.550	209545.984	10.260f	7.453	5.634f	151.74	3313.68	520.559	22.117
14.560	209697.781	10.257f	7.458	5.621f	151.75	3314.47	520.305	22.113
14.570	209849.484	10.254f	7.464	5.608f	151.76	3315.25	520.052	22.108
14.580	210001.375	10.250f	7.469	5.595f	151.77	3316.03	519.799	22.104
14.590	210153.125	10.247f	7.474	5.582f	151.79	3316.81	519.546	22.100
14.600	210304.844	10.244f	7.479	5.569f	151.80	3317.60	519.294	22.095
14.610	210456.609	10.240f	7.484	5.556f	151.81	3318.40	519.045	22.091
14.620	210608.500	10.237f	7.489	5.543f	151.82	3319.20	518.796	22.087
14.630	210760.375	10.233f	7.494	5.531f	151.83	3320.00	518.547	22.082
14.640	210912.188	10.230f	7.500	5.518f	151.84	3320.81	518.299	22.078
14.650	211063.969	10.227f	7.505	5.505f	151.85	3321.61	518.052	22.074
14.660	211215.828	10.223f	7.510	5.493f	151.86	3322.41	517.804	22.069
14.670	211367.672	10.220f	7.515	5.480f	151.87	3323.21	517.557	22.065
14.680	211519.656	10.216f	7.520	5.467f	151.89	3324.02	517.310	22.061
14.690	211671.484	10.213f	7.525	5.455f	151.90	3324.82	517.064	22.057
14.700	211823.344	10.210f	7.530	5.442f	151.91	3325.62	516.818	22.052
14.710	211975.266	10.206f	7.536	5.429f	151.92	3326.42	516.572	22.048
14.720	212127.219	10.203f	7.541	5.416f	151.93	3327.26	516.332	22.044
14.730	212279.188	10.199f	7.546	5.403f	151.94	3328.10	516.093	22.040
14.740	212431.094	10.196f	7.551	5.390f	151.95	3328.94	515.854	22.036
14.750	212583.047	10.192f	7.556	5.377f	151.97	3329.78	515.615	22.032
14.760	212735.109	10.189f	7.561	5.363f	151.98	3330.62	515.376	22.027
14.770	212887.094	10.186f	7.566	5.350f	151.99	3331.46	515.138	22.023
14.780	213039.063	10.182f	7.572	5.337f	152.00	3332.30	514.900	22.019
14.790	213191.000	10.179f	7.577	5.324f	152.01	3333.14	514.663	22.015
14.800	213343.063	10.175f	7.582	5.311f	152.02	3333.98	514.426	22.011
14.810	213495.109	10.172f	7.587	5.298f	152.04	3334.81	514.189	22.007
14.820	213647.234	10.168f	7.592	5.284f	152.05	3335.65	513.952	22.003
14.830	213799.172	10.165f	7.597	5.271f	152.06	3336.49	513.715	21.999
14.840	213951.188	10.161f	7.602	5.258f	152.07	3337.33	513.479	21.995
14.850	214103.328	10.158f	7.608	5.245f	152.08	3338.17	513.244	21.991
14.860	214255.406	10.154f	7.613	5.232f	152.09	3339.02	513.010	21.987
14.870	214407.578	10.151f	7.618	5.218f	152.11	3339.88	512.778	21.983
14.880	214559.641	10.147f	7.623	5.205f	152.12	3340.75	512.548	21.979
14.890	214711.734	10.144f	7.628	5.191f	152.13	3341.61	512.317	21.975
14.900	214863.859	10.140f	7.633	5.178f	152.14	3342.47	512.086	21.971
14.910	215016.109	10.137f	7.638	5.164f	152.15	3343.34	511.856	21.967
14.920	215168.266	10.133f	7.644	5.151f	152.17	3344.20	511.626	21.963
14.930	215320.375	10.130f	7.649	5.137f	152.18	3345.06	511.397	21.959
14.940	215472.516	10.126f	7.654	5.124f	152.19	3345.93	511.168	21.955
14.950	215624.672	10.123f	7.659	5.111f	152.20	3346.79	510.938	21.951
14.960	215776.969	10.119f	7.664	5.097f	152.21	3347.65	510.710	21.947
14.970	215929.203	10.116f	7.669	5.084f	152.23	3348.51	510.481	21.944
14.980	216081.406	10.112f	7.674	5.070f	152.24	3349.38	510.253	21.940
14.990	216233.563	10.109f	7.680	5.057f	152.25	3350.24	510.025	21.936
15.000	216385.844	10.105f	7.685	5.043f	152.26	3351.11	509.798	21.932
15.010	216538.172	10.101f	7.690	5.030f	152.27	3351.98	509.572	21.928
15.020	216690.531	10.098f	7.695	5.016f	152.29	3352.86	509.347	21.925
15.030	216842.719	10.094f	7.700	5.002f	152.30	3353.74	509.123	21.921

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
15.040	216995.016	10.091f	7.705	4.989f	152.31	3354.62	508.899	21.917
15.050	217147.313	10.087f	7.710	4.975f	152.32	3355.50	508.676	21.913
15.060	217299.703	10.083f	7.716	4.961f	152.33	3356.39	508.454	21.909
15.070	217452.031	10.080f	7.721	4.948f	152.35	3357.27	508.232	21.906
15.080	217604.375	10.076f	7.726	4.934f	152.36	3358.16	508.010	21.902
15.090	217756.734	10.073f	7.731	4.920f	152.37	3359.05	507.789	21.898
15.100	217909.125	10.069f	7.736	4.906f	152.38	3359.94	507.569	21.895
15.110	218061.547	10.065f	7.741	4.892f	152.40	3360.84	507.349	21.891
15.120	218213.938	10.062f	7.747	4.879f	152.41	3361.73	507.130	21.887
15.130	218366.313	10.058f	7.752	4.865f	152.42	3362.63	506.911	21.884
15.140	218518.750	10.055f	7.757	4.851f	152.43	3363.53	506.693	21.880
15.150	218671.234	10.051f	7.762	4.837f	152.44	3364.43	506.476	21.876
15.160	218823.719	10.047f	7.767	4.823f	152.46	3365.33	506.258	21.873
15.170	218976.156	10.044f	7.772	4.809f	152.47	3366.24	506.042	21.869
15.180	219128.547	10.040f	7.777	4.795f	152.48	3367.14	505.826	21.866
15.190	219281.000	10.036f	7.783	4.781f	152.49	3368.05	505.611	21.862
15.200	219433.656	10.033f	7.788	4.767f	152.51	3368.96	505.395	21.858
15.210	219586.125	10.029f	7.793	4.753f	152.52	3369.87	505.181	21.855
15.220	219738.641	10.025f	7.798	4.739f	152.53	3370.79	504.967	21.851
15.230	219891.141	10.022f	7.803	4.725f	152.54	3371.70	504.754	21.848
15.240	220043.703	10.018f	7.808	4.711f	152.56	3372.62	504.542	21.844
15.250	220196.266	10.014f	7.813	4.696f	152.57	3373.54	504.329	21.841
15.260	220348.891	10.011f	7.819	4.682f	152.58	3374.46	504.118	21.837
15.270	220501.484	10.007f	7.824	4.668f	152.59	3375.38	503.907	21.834
15.280	220654.031	10.003f	7.829	4.654f	152.61	3376.31	503.696	21.830
15.290	220806.703	10.000f	7.834	4.640f	152.62	3377.23	503.486	21.827
15.300	220959.344	9.996f	7.839	4.625f	152.63	3378.16	503.276	21.824
15.310	221112.000	9.992f	7.844	4.611f	152.65	3379.08	503.066	21.820
15.320	221264.625	9.988f	7.850	4.598f	152.66	3379.91	502.842	21.817
15.330	221417.203	9.985f	7.855	4.583f	152.67	3380.82	502.632	21.813
15.340	221569.891	9.981f	7.860	4.569f	152.68	3381.74	502.422	21.810
15.350	221722.703	9.977f	7.865	4.554f	152.69	3382.66	502.212	21.807
15.360	221875.391	9.974f	7.870	4.540f	152.71	3383.59	502.003	21.803
15.370	222028.047	9.970f	7.875	4.525f	152.72	3384.51	501.796	21.800
15.380	222180.703	9.966f	7.881	4.511f	152.73	3385.44	501.588	21.797
15.390	222333.469	9.962f	7.886	4.496f	152.75	3386.37	501.381	21.793
15.400	222486.234	9.959f	7.891	4.482f	152.76	3387.30	501.174	21.790
15.410	222639.109	9.955f	7.896	4.467f	152.77	3388.23	500.968	21.787
15.420	222791.797	9.951f	7.901	4.453f	152.78	3389.16	500.763	21.783
15.430	222944.609	9.947f	7.906	4.438f	152.80	3390.10	500.558	21.780
15.440	223097.391	9.943f	7.911	4.423f	152.81	3391.04	500.353	21.777
15.450	223250.234	9.940f	7.917	4.408f	152.82	3391.98	500.149	21.774
15.460	223403.109	9.936f	7.922	4.394f	152.84	3392.92	499.946	21.770
15.470	223555.859	9.932f	7.927	4.379f	152.85	3393.86	499.743	21.767
15.480	223708.656	9.928f	7.932	4.364f	152.86	3394.81	499.541	21.764
15.490	223861.563	9.924f	7.937	4.349f	152.87	3395.76	499.339	21.761
15.500	224014.469	9.921f	7.942	4.335f	152.89	3396.71	499.138	21.758
15.510	224167.359	9.917f	7.948	4.320f	152.90	3397.66	498.937	21.754
15.520	224320.266	9.913f	7.953	4.305f	152.91	3398.61	498.738	21.751
15.530	224473.203	9.909f	7.958	4.290f	152.93	3399.57	498.538	21.748
15.540	224626.156	9.905f	7.963	4.275f	152.94	3400.53	498.339	21.745
15.550	224779.156	9.902f	7.968	4.260f	152.95	3401.49	498.140	21.742
15.560	224932.141	9.898f	7.973	4.245f	152.97	3402.45	497.942	21.739

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
15.570	225084.969	9.894f	7.979	4.230f	152.98	3403.42	497.745	21.736
15.580	225237.969	9.890f	7.984	4.215f	152.99	3404.38	497.549	21.732
15.590	225391.000	9.886f	7.989	4.200f	153.00	3405.35	497.352	21.729
15.600	225544.047	9.882f	7.994	4.185f	153.02	3406.32	497.157	21.726
15.610	225697.094	9.878f	7.999	4.170f	153.03	3407.30	496.961	21.723
15.620	225850.031	9.875f	8.004	4.155f	153.04	3408.27	496.767	21.720
15.630	226003.109	9.871f	8.009	4.139f	153.06	3409.25	496.573	21.717
15.640	226156.203	9.867f	8.015	4.124f	153.07	3410.23	496.379	21.714
15.650	226309.344	9.863f	8.020	4.112f	153.08	3410.98	496.153	21.711
15.660	226462.391	9.859f	8.025	4.097f	153.09	3411.96	495.960	21.708
15.670	226615.422	9.855f	8.030	4.082f	153.11	3412.94	495.767	21.705
15.680	226768.563	9.851f	8.035	4.066f	153.12	3413.92	495.575	21.702
15.690	226921.719	9.847f	8.040	4.051f	153.14	3414.91	495.384	21.699
15.700	227074.906	9.843f	8.046	4.036f	153.15	3415.90	495.193	21.696
15.710	227228.063	9.839f	8.051	4.020f	153.16	3416.89	495.003	21.693
15.720	227381.172	9.835f	8.056	4.005f	153.18	3417.89	494.814	21.690
15.730	227534.297	9.832f	8.061	3.990f	153.19	3418.88	494.625	21.688
15.740	227687.594	9.828f	8.066	3.974f	153.20	3419.89	494.437	21.685
15.750	227840.844	9.824f	8.071	3.959f	153.22	3420.89	494.250	21.682
15.760	227994.031	9.820f	8.077	3.943f	153.23	3421.90	494.063	21.679
15.770	228147.203	9.816f	8.082	3.928f	153.24	3422.91	493.877	21.676
15.780	228300.438	9.812f	8.087	3.912f	153.26	3423.93	493.692	21.673
15.790	228453.719	9.808f	8.092	3.896f	153.27	3424.95	493.508	21.670
15.800	228607.063	9.804f	8.097	3.881f	153.28	3425.97	493.324	21.667
15.810	228760.266	9.800f	8.102	3.865f	153.30	3427.00	493.142	21.665
15.820	228913.609	9.796f	8.108	3.849f	153.31	3428.02	492.959	21.662
15.830	229067.016	9.792f	8.113	3.833f	153.33	3429.06	492.778	21.659
15.840	229220.234	9.788f	8.118	3.817f	153.34	3430.10	492.597	21.656
15.850	229373.656	9.784f	8.123	3.801f	153.35	3431.14	492.418	21.653
15.860	229527.000	9.780f	8.128	3.785f	153.37	3432.19	492.239	21.651
15.870	229680.359	9.776f	8.133	3.769f	153.38	3433.24	492.060	21.648
15.880	229833.797	9.772f	8.139	3.753f	153.40	3434.29	491.883	21.645
15.890	229987.219	9.768f	8.144	3.737f	153.41	3435.35	491.706	21.642
15.900	230140.563	9.764f	8.149	3.721f	153.43	3436.41	491.531	21.640
15.910	230294.016	9.760f	8.154	3.704f	153.44	3437.48	491.356	21.637
15.920	230447.453	9.756f	8.159	3.688f	153.45	3438.55	491.181	21.634
15.930	230600.938	9.752f	8.164	3.672f	153.47	3439.62	491.008	21.632
15.940	230754.406	9.748f	8.170	3.655f	153.48	3440.70	490.836	21.629
15.950	230907.875	9.744f	8.175	3.644f	153.49	3441.37	490.604	21.626
15.960	231061.359	9.740f	8.180	3.628f	153.51	3442.42	490.428	21.624
15.970	231214.875	9.736f	8.185	3.612f	153.52	3443.47	490.252	21.621
15.980	231368.422	9.731f	8.190	3.596f	153.54	3444.52	490.076	21.618
15.990	231522.031	9.727f	8.195	3.580f	153.55	3445.58	489.901	21.616
16.000	231675.531	9.723f	8.201	3.564f	153.56	3446.63	489.726	21.613
16.010	231829.094	9.719f	8.206	3.551f	153.58	3447.54	489.531	21.610
16.020	231982.656	9.715f	8.211	3.538f	153.59	3448.46	489.337	21.608
16.030	232136.313	9.711f	8.216	3.524f	153.60	3449.38	489.143	21.605
16.040	232289.984	9.707f	8.221	3.511f	153.61	3450.30	488.950	21.602
16.050	232443.531	9.703f	8.226	3.498f	153.63	3451.22	488.758	21.600
16.060	232597.125	9.699f	8.232	3.484f	153.64	3452.14	488.566	21.597
16.070	232750.766	9.695f	8.237	3.471f	153.65	3453.07	488.374	21.595
16.080	232904.453	9.691f	8.242	3.457f	153.66	3454.00	488.184	21.592
16.090	233058.172	9.686f	8.247	3.444f	153.68	3454.94	487.994	21.589

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
16.100	233211.750	9.682f	8.252	3.430f	153.69	3455.88	487.805	21.587
16.110	233365.453	9.678f	8.257	3.417f	153.70	3456.82	487.617	21.584
16.120	233519.188	9.674f	8.263	3.403f	153.71	3457.76	487.429	21.582
16.130	233672.922	9.670f	8.268	3.390f	153.73	3458.71	487.241	21.579
16.140	233826.797	9.666f	8.273	3.376f	153.74	3459.66	487.055	21.577
16.150	233980.359	9.662f	8.278	3.362f	153.75	3460.61	486.869	21.574
16.160	234134.094	9.658f	8.283	3.349f	153.77	3461.57	486.684	21.571
16.170	234287.891	9.653f	8.289	3.335f	153.78	3462.53	486.500	21.569
16.180	234441.766	9.649f	8.294	3.321f	153.79	3463.50	486.316	21.566
16.190	234595.594	9.645f	8.299	3.307f	153.81	3464.47	486.133	21.564
16.200	234749.344	9.641f	8.304	3.293f	153.82	3465.44	485.951	21.561
16.210	234903.078	9.637f	8.309	3.280f	153.83	3466.37	485.763	21.559
16.220	235057.031	9.633f	8.314	3.267f	153.84	3467.30	485.576	21.557
16.230	235210.844	9.628f	8.320	3.253f	153.86	3468.24	485.389	21.554
16.240	235364.766	9.624f	8.325	3.240f	153.87	3469.17	485.202	21.552
16.250	235518.594	9.620f	8.330	3.226f	153.88	3470.11	485.016	21.549
16.260	235672.438	9.616f	8.335	3.213f	153.89	3471.04	484.831	21.547
16.270	235826.391	9.612f	8.340	3.199f	153.91	3471.98	484.645	21.544
16.280	235980.391	9.607f	8.345	3.186f	153.92	3472.92	484.460	21.542
16.290	236134.328	9.603f	8.351	3.172f	153.93	3473.86	484.275	21.540
16.300	236288.203	9.599f	8.356	3.159f	153.94	3474.81	484.091	21.537
16.310	236442.078	9.595f	8.361	3.150f	153.95	3475.38	483.857	21.535
16.320	236596.094	9.591f	8.366	3.136f	153.97	3476.32	483.672	21.533
16.330	236750.109	9.586f	8.371	3.123f	153.98	3477.26	483.488	21.530
16.340	236904.094	9.582f	8.377	3.109f	153.99	3478.20	483.304	21.528
16.350	237058.031	9.578f	8.382	3.096f	154.00	3479.14	483.121	21.526
16.360	237212.000	9.574f	8.387	3.082f	154.02	3480.09	482.939	21.523
16.370	237366.125	9.570f	8.392	3.069f	154.03	3481.03	482.756	21.521
16.380	237520.234	9.565f	8.397	3.055f	154.04	3481.98	482.575	21.519
16.390	237674.188	9.561f	8.402	3.042f	154.06	3482.93	482.394	21.516
16.400	237828.172	9.557f	8.408	3.028f	154.07	3483.89	482.213	21.514
16.410	237982.297	9.553f	8.413	3.014f	154.08	3484.84	482.033	21.512
16.420	238136.406	9.549f	8.418	3.000f	154.09	3485.80	481.854	21.510
16.430	238290.563	9.544f	8.423	2.987f	154.11	3486.76	481.675	21.507
16.440	238444.656	9.540f	8.428	2.973f	154.12	3487.73	481.497	21.505
16.450	238598.703	9.536f	8.433	2.959f	154.13	3488.70	481.320	21.503
16.460	238752.813	9.532f	8.439	2.945f	154.15	3489.67	481.143	21.501
16.470	238907.047	9.527f	8.444	2.931f	154.16	3490.64	480.966	21.499
16.480	239061.266	9.523f	8.449	2.917f	154.17	3491.62	480.791	21.496
16.490	239215.453	9.519f	8.454	2.904f	154.19	3492.60	480.616	21.494
16.500	239369.609	9.514f	8.459	2.889f	154.20	3493.58	480.441	21.492
16.510	239523.734	9.510f	8.465	2.875f	154.21	3494.57	480.268	21.490
16.520	239677.984	9.506f	8.470	2.861f	154.23	3495.56	480.095	21.488
16.530	239832.281	9.502f	8.475	2.847f	154.24	3496.55	479.922	21.486
16.540	239986.547	9.497f	8.480	2.833f	154.25	3497.55	479.750	21.483
16.550	240140.734	9.493f	8.485	2.819f	154.27	3498.55	479.579	21.481
16.560	240295.016	9.489f	8.490	2.805f	154.28	3499.55	479.409	21.479
16.570	240449.344	9.485f	8.496	2.790f	154.29	3500.56	479.239	21.477
16.580	240603.688	9.480f	8.501	2.776f	154.31	3501.57	479.071	21.475
16.590	240757.938	9.476f	8.506	2.762f	154.32	3502.59	478.902	21.473
16.600	240912.234	9.472f	8.511	2.747f	154.33	3503.61	478.735	21.471
16.610	241066.594	9.467f	8.516	2.733f	154.35	3504.63	478.568	21.469
16.620	241221.000	9.463f	8.522	2.718f	154.36	3505.66	478.403	21.467

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
16.630	241375.328	9.459f	8.527	2.708f	154.37	3506.33	478.188	21.465
16.640	241529.688	9.454f	8.532	2.694f	154.38	3507.30	478.014	21.463
16.650	241684.078	9.450f	8.537	2.680f	154.40	3508.27	477.841	21.461
16.660	241838.453	9.446f	8.542	2.666f	154.41	3509.24	477.668	21.459
16.670	241992.891	9.441f	8.547	2.652f	154.42	3510.22	477.496	21.457
16.680	242147.344	9.437f	8.553	2.639f	154.44	3511.19	477.324	21.455
16.690	242301.719	9.433f	8.558	2.625f	154.45	3512.17	477.153	21.453
16.700	242456.188	9.428f	8.563	2.611f	154.46	3513.15	476.982	21.451
16.710	242610.656	9.424f	8.568	2.597f	154.48	3514.14	476.812	21.449
16.720	242765.219	9.420f	8.573	2.583f	154.49	3515.12	476.643	21.447
16.730	242919.656	9.415f	8.579	2.569f	154.50	3516.11	476.473	21.445
16.740	243074.188	9.411f	8.584	2.554f	154.52	3517.10	476.305	21.443
16.750	243228.656	9.407f	8.589	2.540f	154.53	3518.10	476.137	21.441
16.760	243383.297	9.402f	8.594	2.526f	154.54	3519.10	475.969	21.439
16.770	243537.906	9.398f	8.599	2.512f	154.56	3520.10	475.803	21.437
16.780	243692.422	9.393f	8.604	2.498f	154.57	3521.10	475.636	21.435
16.790	243846.891	9.389f	8.610	2.483f	154.58	3522.10	475.471	21.433
16.800	244001.500	9.385f	8.615	2.469f	154.60	3523.11	475.305	21.432
16.810	244156.125	9.380f	8.620	2.455f	154.61	3524.11	475.139	21.430
16.820	244310.844	9.376f	8.625	2.440f	154.62	3525.12	474.974	21.428
16.830	244465.422	9.372f	8.630	2.426f	154.64	3526.13	474.810	21.426
16.840	244620.031	9.367f	8.636	2.411f	154.65	3527.15	474.646	21.424
16.850	244774.641	9.363f	8.641	2.396f	154.66	3528.16	474.484	21.422
16.860	244929.453	9.358f	8.646	2.382f	154.68	3529.19	474.321	21.421
16.870	245084.156	9.354f	8.651	2.367f	154.69	3530.21	474.160	21.419
16.880	245238.797	9.350f	8.656	2.352f	154.71	3531.25	473.999	21.417
16.890	245393.516	9.345f	8.662	2.337f	154.72	3532.28	473.839	21.415
16.900	245548.094	9.341f	8.667	2.323f	154.73	3533.32	473.680	21.413
16.910	245702.984	9.336f	8.672	2.308f	154.75	3534.36	473.521	21.412
16.920	245857.688	9.332f	8.677	2.293f	154.76	3535.41	473.364	21.410
16.930	246012.500	9.327f	8.682	2.278f	154.78	3536.46	473.206	21.408
16.940	246167.281	9.323f	8.687	2.267f	154.79	3537.15	473.001	21.406
16.950	246322.031	9.319f	8.693	2.252f	154.80	3538.17	472.840	21.405
16.960	246476.859	9.314f	8.698	2.238f	154.81	3539.19	472.679	21.403
16.970	246631.734	9.310f	8.703	2.223f	154.83	3540.20	472.517	21.401
16.980	246786.516	9.305f	8.708	2.209f	154.84	3541.22	472.357	21.400
16.990	246941.266	9.301f	8.713	2.194f	154.85	3542.24	472.197	21.398
17.000	247096.266	9.296f	8.719	2.180f	154.87	3543.25	472.036	21.396
17.010	247251.172	9.292f	8.724	2.166f	154.88	3544.24	471.871	21.394
17.020	247406.109	9.287f	8.729	2.151f	154.89	3545.22	471.707	21.393
17.030	247560.813	9.283f	8.734	2.137f	154.91	3546.21	471.543	21.391
17.040	247715.734	9.278f	8.739	2.123f	154.92	3547.19	471.379	21.389
17.050	247870.719	9.274f	8.745	2.109f	154.93	3548.18	471.214	21.388
17.060	248025.719	9.269f	8.750	2.095f	154.95	3549.16	471.050	21.386
17.070	248180.609	9.265f	8.755	2.081f	154.96	3550.14	470.887	21.385
17.080	248335.484	9.260f	8.760	2.067f	154.97	3551.13	470.724	21.383
17.090	248490.453	9.256f	8.765	2.053f	154.99	3552.11	470.560	21.381
17.100	248645.609	9.251f	8.771	2.039f	155.00	3553.09	470.397	21.380
17.110	248800.672	9.247f	8.776	2.025f	155.01	3554.08	470.234	21.378
17.120	248955.563	9.242f	8.781	2.011f	155.03	3555.06	470.071	21.377
17.130	249110.578	9.238f	8.786	1.997f	155.04	3556.03	469.908	21.375
17.140	249265.641	9.233f	8.791	1.983f	155.05	3557.01	469.744	21.374
17.150	249420.766	9.229f	8.797	1.968f	155.07	3557.99	469.581	21.372

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
17.160	249575.828	9.224f	8.802	1.954f	155.08	3558.97	469.419	21.370
17.170	249730.859	9.220f	8.807	1.940f	155.09	3559.95	469.256	21.369
17.180	249885.953	9.215f	8.812	1.926f	155.11	3560.93	469.094	21.367
17.190	250040.984	9.211f	8.817	1.912f	155.12	3561.90	468.932	21.366
17.200	250196.281	9.206f	8.822	1.898f	155.13	3562.88	468.769	21.364
17.210	250351.375	9.202f	8.828	1.884f	155.15	3563.86	468.607	21.363
17.220	250506.484	9.197f	8.833	1.870f	155.16	3564.83	468.445	21.361
17.230	250661.531	9.193f	8.838	1.856f	155.17	3565.81	468.284	21.360
17.240	250816.781	9.188f	8.843	1.842f	155.19	3566.79	468.122	21.359
17.250	250971.984	9.184f	8.848	1.828f	155.20	3567.77	467.961	21.357
17.260	251127.250	9.179f	8.854	1.814f	155.21	3568.74	467.800	21.356
17.270	251282.438	9.175f	8.859	1.799f	155.23	3569.72	467.639	21.354
17.280	251437.750	9.170f	8.864	1.785f	155.24	3570.70	467.478	21.353
17.290	251592.953	9.165f	8.869	1.771f	155.25	3571.67	467.317	21.351
17.300	251748.328	9.161f	8.874	1.757f	155.26	3572.65	467.157	21.350
17.310	251903.594	9.156f	8.880	1.743f	155.28	3573.62	466.996	21.349
17.320	252058.688	9.152f	8.885	1.729f	155.29	3574.60	466.836	21.347
17.330	252214.172	9.147f	8.890	1.715f	155.30	3575.58	466.676	21.346
17.340	252369.328	9.143f	8.895	1.701f	155.32	3576.55	466.516	21.344
17.350	252524.781	9.138f	8.900	1.687f	155.33	3577.52	466.355	21.343
17.360	252680.125	9.133f	8.906	1.673f	155.34	3578.48	466.194	21.342
17.370	252835.328	9.129f	8.911	1.659f	155.36	3579.44	466.033	21.340
17.380	252990.688	9.124f	8.916	1.645f	155.37	3580.41	465.872	21.339
17.390	253146.094	9.120f	8.921	1.631f	155.38	3581.37	465.712	21.338
17.400	253301.625	9.115f	8.926	1.617f	155.40	3582.34	465.551	21.336
17.410	253457.094	9.110f	8.932	1.604f	155.41	3583.30	465.391	21.335
17.420	253612.328	9.106f	8.937	1.590f	155.42	3584.26	465.231	21.334
17.430	253767.703	9.101f	8.942	1.576f	155.44	3585.23	465.071	21.332
17.440	253923.125	9.097f	8.947	1.562f	155.45	3586.19	464.911	21.331
17.450	254078.766	9.092f	8.952	1.548f	155.46	3587.15	464.751	21.330
17.460	254234.109	9.087f	8.958	1.534f	155.48	3588.14	464.595	21.329
17.470	254389.516	9.083f	8.963	1.521f	155.49	3589.12	464.438	21.327
17.480	254544.953	9.078f	8.968	1.507f	155.50	3590.11	464.282	21.326
17.490	254700.609	9.073f	8.973	1.494f	155.52	3591.09	464.125	21.325
17.500	254856.234	9.069f	8.978	1.480f	155.53	3592.08	463.969	21.324
17.510	255011.609	9.064f	8.984	1.466f	155.54	3593.06	463.813	21.322
17.520	255167.219	9.060f	8.989	1.453f	155.56	3594.04	463.657	21.321
17.530	255322.781	9.055f	8.994	1.439f	155.57	3595.03	463.502	21.320
17.540	255478.469	9.050f	8.999	1.426f	155.58	3596.01	463.346	21.319
17.550	255634.078	9.046f	9.004	1.412f	155.60	3596.99	463.191	21.318
17.560	255789.500	9.041f	9.010	1.398f	155.61	3597.98	463.036	21.316
17.570	255945.141	9.036f	9.015	1.385f	155.62	3598.96	462.881	21.315
17.580	256100.734	9.032f	9.020	1.371f	155.64	3599.94	462.726	21.314
17.590	256256.484	9.027f	9.025	1.358f	155.65	3600.93	462.571	21.313
17.600	256412.109	9.022f	9.030	1.344f	155.66	3601.91	462.416	21.312
17.610	256567.688	9.018f	9.036	1.330f	155.68	3602.89	462.262	21.311
17.620	256723.453	9.013f	9.041	1.317f	155.69	3603.88	462.108	21.310
17.630	256879.063	9.008f	9.046	1.303f	155.70	3604.86	461.954	21.308
17.640	257034.938	9.004f	9.051	1.290f	155.72	3605.84	461.799	21.307
17.650	257190.578	8.999f	9.056	1.276f	155.73	3606.82	461.646	21.306
17.660	257346.344	8.994f	9.062	1.263f	155.74	3607.81	461.492	21.305
17.670	257502.063	8.990f	9.067	1.249f	155.76	3608.79	461.338	21.304
17.680	257657.828	8.985f	9.072	1.236f	155.77	3609.77	461.185	21.303

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
17.690	257813.656	8.980f	9.077	1.222f	155.78	3610.75	461.031	21.302
17.700	257969.438	8.976f	9.082	1.208f	155.80	3611.73	460.878	21.301
17.710	258125.094	8.971f	9.088	1.195f	155.81	3612.72	460.726	21.300
17.720	258280.891	8.966f	9.093	1.181f	155.82	3613.70	460.573	21.299
17.730	258436.859	8.962f	9.098	1.168f	155.84	3614.68	460.420	21.298
17.740	258592.688	8.957f	9.103	1.154f	155.85	3615.66	460.267	21.297
17.750	258748.406	8.952f	9.109	1.141f	155.86	3616.64	460.115	21.296
17.760	258904.406	8.947f	9.114	1.127f	155.88	3617.62	459.963	21.295
17.770	259060.297	8.943f	9.119	1.114f	155.89	3618.60	459.811	21.294
17.780	259216.203	8.938f	9.124	1.100f	155.90	3619.58	459.659	21.293
17.790	259372.141	8.933f	9.129	1.086f	155.92	3620.57	459.507	21.292
17.800	259528.109	8.929f	9.135	1.073f	155.93	3621.55	459.355	21.291
17.810	259683.891	8.924f	9.140	1.059f	155.94	3622.53	459.204	21.290
17.820	259839.828	8.919f	9.145	1.046f	155.96	3623.51	459.052	21.289
17.830	259995.891	8.914f	9.150	1.032f	155.97	3624.49	458.901	21.288
17.840	260151.859	8.910f	9.155	1.019f	155.98	3625.47	458.750	21.287
17.850	260307.797	8.905f	9.161	1.005f	156.00	3626.45	458.599	21.286
17.860	260463.844	8.900f	9.166	0.992f	156.01	3627.43	458.448	21.285
17.870	260619.938	8.895f	9.171	0.978f	156.02	3628.41	458.297	21.284
17.880	260775.734	8.891f	9.176	0.965f	156.04	3629.39	458.147	21.283
17.890	260932.016	8.886f	9.181	0.951f	156.05	3630.37	457.996	21.282
17.900	261087.953	8.881f	9.187	0.938f	156.06	3631.35	457.846	21.281
17.910	261243.953	8.877f	9.192	0.924f	156.08	3632.33	457.696	21.280
17.920	261400.203	8.872f	9.197	0.911f	156.09	3633.31	457.546	21.280
17.930	261556.172	8.867f	9.202	0.897f	156.10	3634.29	457.397	21.279
17.940	261712.344	8.862f	9.207	0.884f	156.12	3635.27	457.247	21.278
17.950	261868.438	8.857f	9.213	0.870f	156.13	3636.25	457.099	21.277
17.960	262024.516	8.853f	9.218	0.857f	156.14	3637.24	456.950	21.276
17.970	262180.594	8.848f	9.223	0.844f	156.16	3638.22	456.801	21.275
17.980	262337.000	8.843f	9.228	0.830f	156.17	3639.20	456.652	21.274
17.990	262493.188	8.838f	9.233	0.817f	156.18	3640.19	456.504	21.274
18.000	262649.344	8.834f	9.239	0.803f	156.20	3641.17	456.355	21.273
18.010	262805.469	8.829f	9.244	0.793f	156.21	3641.99	456.188	21.272
18.020	262961.594	8.824f	9.249	0.783f	156.22	3642.82	456.020	21.271
18.030	263117.906	8.819f	9.254	0.773f	156.23	3643.64	455.852	21.270
18.040	263274.344	8.815f	9.260	0.763f	156.24	3644.47	455.685	21.269
18.050	263430.438	8.810f	9.265	0.752f	156.25	3645.29	455.517	21.268
18.060	263586.688	8.805f	9.270	0.742f	156.27	3646.12	455.350	21.267
18.070	263743.000	8.800f	9.275	0.732f	156.28	3646.94	455.183	21.266
18.080	263899.219	8.795f	9.280	0.722f	156.29	3647.76	455.017	21.265
18.090	264055.750	8.791f	9.286	0.712f	156.30	3648.59	454.850	21.264
18.100	264211.781	8.786f	9.291	0.701f	156.31	3649.41	454.684	21.264
18.110	264368.156	8.781f	9.296	0.691f	156.32	3650.24	454.517	21.263
18.120	264524.375	8.776f	9.301	0.681f	156.33	3651.06	454.352	21.262
18.130	264680.875	8.771f	9.306	0.671f	156.34	3651.89	454.185	21.261
18.140	264837.219	8.767f	9.312	0.661f	156.35	3652.71	454.020	21.260
18.150	264993.500	8.762f	9.317	0.651f	156.37	3653.53	453.854	21.259
18.160	265149.875	8.757f	9.322	0.640f	156.38	3654.36	453.689	21.258
18.170	265306.313	8.752f	9.327	0.630f	156.39	3655.18	453.524	21.258
18.180	265462.750	8.748f	9.333	0.620f	156.40	3656.01	453.359	21.257
18.190	265619.188	8.743f	9.338	0.610f	156.41	3656.83	453.194	21.256
18.200	265775.469	8.738f	9.343	0.600f	156.42	3657.65	453.029	21.255
18.210	265931.938	8.733f	9.348	0.590f	156.43	3658.48	452.865	21.254

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
18.220	266088.375	8.728f	9.353	0.579f	156.44	3659.30	452.700	21.254
18.230	266244.875	8.724f	9.359	0.569f	156.46	3660.12	452.536	21.253
18.240	266401.406	8.719f	9.364	0.559f	156.47	3660.95	452.372	21.252
18.250	266557.750	8.714f	9.369	0.549f	156.48	3661.77	452.208	21.251
18.260	266714.125	8.709f	9.374	0.539f	156.49	3662.59	452.045	21.250
18.270	266870.719	8.704f	9.379	0.529f	156.50	3663.42	451.881	21.250
18.280	267027.281	8.700f	9.385	0.518f	156.51	3664.24	451.718	21.249
18.290	267183.750	8.695f	9.390	0.508f	156.52	3665.07	451.555	21.248
18.300	267340.219	8.690f	9.395	0.498f	156.53	3665.89	451.392	21.247
18.310	267496.781	8.685f	9.400	0.488f	156.55	3666.71	451.229	21.247
18.320	267653.375	8.680f	9.406	0.478f	156.56	3667.53	451.066	21.246
18.330	267809.969	8.676f	9.411	0.468f	156.57	3668.36	450.903	21.245
18.340	267966.469	8.671f	9.416	0.458f	156.58	3669.18	450.741	21.245
18.350	268123.125	8.666f	9.421	0.447f	156.59	3670.00	450.579	21.244
18.360	268279.719	8.661f	9.426	0.437f	156.60	3670.83	450.417	21.243
18.370	268436.344	8.656f	9.432	0.427f	156.61	3671.65	450.255	21.242
18.380	268592.938	8.652f	9.437	0.417f	156.62	3672.47	450.094	21.242
18.390	268749.625	8.647f	9.442	0.407f	156.63	3673.30	449.932	21.241
18.400	268906.188	8.642f	9.447	0.397f	156.65	3674.12	449.771	21.240
18.410	269062.750	8.637f	9.452	0.387f	156.66	3674.94	449.610	21.240
18.420	269219.531	8.632f	9.458	0.377f	156.67	3675.76	449.448	21.239
18.430	269376.188	8.628f	9.463	0.366f	156.68	3676.59	449.288	21.239
18.440	269532.781	8.623f	9.468	0.356f	156.69	3677.41	449.127	21.238
18.450	269689.594	8.618f	9.473	0.346f	156.70	3678.23	448.966	21.237
18.460	269846.250	8.613f	9.479	0.336f	156.71	3679.06	448.806	21.237
18.470	270002.938	8.608f	9.484	0.326f	156.72	3679.88	448.646	21.236
18.480	270159.719	8.604f	9.489	0.316f	156.74	3680.70	448.486	21.235
18.490	270316.375	8.599f	9.494	0.306f	156.75	3681.52	448.326	21.235
18.500	270473.125	8.594f	9.499	0.296f	156.76	3682.35	448.166	21.234
18.510	270630.000	8.589f	9.505	0.285f	156.77	3683.17	448.007	21.234
18.520	270786.781	8.584f	9.510	0.275f	156.78	3683.99	447.847	21.233
18.530	270943.469	8.580f	9.515	0.265f	156.79	3684.81	447.688	21.233
18.540	271100.188	8.575f	9.520	0.255f	156.80	3685.64	447.529	21.232
18.550	271257.125	8.570f	9.525	0.245f	156.81	3686.46	447.370	21.231
18.560	271413.969	8.565f	9.531	0.235f	156.82	3687.29	447.212	21.231
18.570	271570.969	8.560f	9.536	0.225f	156.84	3688.11	447.054	21.230
18.580	271727.750	8.555f	9.541	0.215f	156.85	3688.94	446.896	21.230
18.590	271884.406	8.551f	9.546	0.205f	156.86	3689.77	446.739	21.229
18.600	272041.188	8.546f	9.552	0.195f	156.87	3690.59	446.581	21.229
18.610	272198.156	8.541f	9.557	0.185f	156.88	3691.44	446.426	21.228
18.620	272355.125	8.536f	9.562	0.175f	156.89	3692.29	446.271	21.228
18.630	272512.031	8.531f	9.567	0.165f	156.90	3693.13	446.116	21.227
18.640	272669.000	8.527f	9.572	0.156f	156.92	3693.98	445.962	21.227
18.650	272825.781	8.522f	9.578	0.146f	156.93	3694.82	445.807	21.226
18.660	272982.875	8.517f	9.583	0.136f	156.94	3695.67	445.653	21.226
18.670	273139.750	8.512f	9.588	0.126f	156.95	3696.52	445.499	21.225
18.680	273296.719	8.507f	9.593	0.116f	156.96	3697.36	445.345	21.225
18.690	273453.625	8.502f	9.599	0.107f	156.97	3698.21	445.191	21.224
18.700	273610.625	8.498f	9.604	0.097f	156.98	3699.05	445.037	21.224
18.710	273767.469	8.493f	9.609	0.087f	157.00	3699.90	444.884	21.223
18.720	273924.625	8.488f	9.614	0.077f	157.01	3700.75	444.730	21.223
18.730	274081.719	8.483f	9.619	0.068f	157.02	3701.59	444.577	21.223
18.740	274238.688	8.478f	9.625	0.058f	157.03	3702.44	444.424	21.222

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
18.750	274395.469	8.474f	9.630	0.048f	157.04	3703.28	444.272	21.222
18.760	274552.844	8.469f	9.635	0.038f	157.05	3704.13	444.118	21.221
18.770	274709.781	8.464f	9.640	0.028f	157.07	3704.97	443.966	21.221
18.780	274866.813	8.459f	9.646	0.019f	157.08	3705.82	443.813	21.221
18.790	275024.031	8.454f	9.651	0.009f	157.09	3706.66	443.661	21.220
18.800	275181.031	8.449f	9.656	0.000	157.10	3707.51	443.509	21.220
18.810	275338.063	8.445f	9.661	0.011a	157.11	3708.35	443.357	21.219
18.820	275495.313	8.440f	9.666	0.020a	157.12	3709.20	443.205	21.219
18.830	275652.281	8.435f	9.672	0.030a	157.13	3710.04	443.054	21.219
18.840	275809.469	8.430f	9.677	0.040a	157.15	3710.89	442.902	21.218
18.850	275966.750	8.425f	9.682	0.050a	157.16	3711.73	442.750	21.218
18.860	276123.938	8.421f	9.687	0.059a	157.17	3712.58	442.599	21.218
18.870	276281.063	8.416f	9.693	0.069a	157.18	3713.43	442.448	21.217
18.880	276438.156	8.411f	9.698	0.079a	157.19	3714.27	442.297	21.217
18.890	276595.313	8.406f	9.703	0.089a	157.20	3715.11	442.146	21.217
18.900	276752.625	8.401f	9.708	0.098a	157.21	3715.96	441.996	21.216
18.910	276909.813	8.396f	9.713	0.108a	157.23	3716.80	441.845	21.216
18.920	277067.156	8.392f	9.719	0.118a	157.24	3717.65	441.694	21.216
18.930	277224.250	8.387f	9.724	0.128a	157.25	3718.49	441.545	21.216
18.940	277381.563	8.382f	9.729	0.137a	157.26	3719.34	441.394	21.215
18.950	277538.844	8.377f	9.734	0.147a	157.27	3720.18	441.245	21.215
18.960	277696.063	8.372f	9.740	0.157a	157.28	3721.03	441.095	21.215
18.970	277853.375	8.367f	9.745	0.167a	157.29	3721.87	440.945	21.214
18.980	278010.625	8.363f	9.750	0.176a	157.31	3722.72	440.796	21.214
18.990	278167.875	8.358f	9.755	0.186a	157.32	3723.56	440.647	21.214
19.000	278325.375	8.353f	9.760	0.196a	157.33	3724.41	440.497	21.214
19.010	278482.750	8.348f	9.766	0.205a	157.34	3725.27	440.350	21.213
19.020	278640.031	8.343f	9.771	0.215a	157.35	3726.14	440.204	21.213
19.030	278797.250	8.338f	9.776	0.224a	157.36	3727.01	440.059	21.213
19.040	278954.594	8.334f	9.781	0.234a	157.38	3727.87	439.913	21.213
19.050	279112.125	8.329f	9.787	0.243a	157.39	3728.74	439.767	21.213
19.060	279269.625	8.324f	9.792	0.253a	157.40	3729.61	439.621	21.212
19.070	279426.938	8.319f	9.797	0.262a	157.41	3730.48	439.476	21.212
19.080	279584.313	8.314f	9.802	0.271a	157.42	3731.34	439.330	21.212
19.090	279741.750	8.309f	9.807	0.281a	157.44	3732.21	439.185	21.212
19.100	279899.375	8.305f	9.813	0.290a	157.45	3733.08	439.040	21.212
19.110	280056.781	8.300f	9.818	0.300a	157.46	3733.95	438.895	21.212
19.120	280214.125	8.295f	9.823	0.309a	157.47	3734.81	438.750	21.211
19.130	280371.500	8.290f	9.828	0.319a	157.48	3735.68	438.606	21.211
19.140	280529.000	8.285f	9.834	0.328a	157.49	3736.55	438.462	21.211
19.150	280686.688	8.280f	9.839	0.337a	157.51	3737.42	438.318	21.211
19.160	280844.219	8.276f	9.844	0.347a	157.52	3738.30	438.174	21.211
19.170	281001.563	8.271f	9.849	0.356a	157.53	3739.17	438.031	21.211
19.180	281159.063	8.266f	9.854	0.365a	157.54	3740.04	437.888	21.211
19.190	281316.688	8.261f	9.860	0.375a	157.55	3740.91	437.744	21.210
19.200	281474.438	8.256f	9.865	0.384a	157.57	3741.78	437.601	21.210
19.210	281631.906	8.251f	9.870	0.393a	157.58	3742.65	437.458	21.210
19.220	281789.375	8.247f	9.875	0.403a	157.59	3743.53	437.316	21.210
19.230	281946.938	8.242f	9.881	0.412a	157.60	3744.40	437.173	21.210
19.240	282104.656	8.237f	9.886	0.421a	157.61	3745.27	437.031	21.210
19.250	282262.125	8.232f	9.891	0.431a	157.62	3746.15	436.889	21.210
19.260	282419.969	8.227f	9.896	0.440a	157.64	3747.02	436.747	21.210
19.270	282577.531	8.222f	9.901	0.449a	157.65	3747.90	436.605	21.210

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
19.280	282735.094	8.217f	9.907	0.458a	157.66	3748.78	436.464	21.210
19.290	282892.719	8.213f	9.912	0.468a	157.67	3749.65	436.323	21.210
19.300	283050.469	8.208f	9.917	0.477a	157.68	3750.53	436.182	21.210
19.310	283208.281	8.203f	9.922	0.486a	157.70	3751.41	436.040	21.210
19.320	283365.875	8.198f	9.928	0.496a	157.71	3752.28	435.900	21.210
19.330	283523.594	8.193f	9.933	0.505a	157.72	3753.16	435.759	21.210
19.340	283681.344	8.188f	9.938	0.514a	157.73	3754.04	435.618	21.210
19.350	283839.125	8.184f	9.943	0.523a	157.74	3754.91	435.478	21.210
19.360	283996.938	8.179f	9.949	0.533a	157.76	3755.79	435.337	21.210
19.370	284154.594	8.174f	9.954	0.542a	157.77	3756.66	435.197	21.210
19.380	284312.250	8.169f	9.959	0.551a	157.78	3757.54	435.057	21.210
19.390	284470.281	8.164f	9.964	0.560a	157.79	3758.42	434.917	21.210
19.400	284627.938	8.159f	9.969	0.570a	157.80	3759.29	434.778	21.210
19.410	284785.688	8.155f	9.975	0.579a	157.81	3760.17	434.638	21.210
19.420	284943.469	8.150f	9.980	0.588a	157.83	3761.04	434.498	21.210
19.430	285101.281	8.145f	9.985	0.597a	157.84	3761.92	434.359	21.210
19.440	285259.250	8.140f	9.990	0.607a	157.85	3762.79	434.220	21.210
19.450	285417.094	8.135f	9.996	0.616a	157.86	3763.67	434.081	21.210
19.460	285574.906	8.130f	10.001	0.625a	157.87	3764.55	433.942	21.210
19.470	285732.844	8.126f	10.006	0.634a	157.89	3765.42	433.803	21.210
19.480	285890.625	8.121f	10.011	0.644a	157.90	3766.30	433.664	21.210
19.490	286048.656	8.116f	10.016	0.653a	157.91	3767.18	433.525	21.210
19.500	286206.688	8.111f	10.022	0.662a	157.92	3768.05	433.387	21.210
19.510	286364.438	8.106f	10.027	0.671a	157.93	3768.93	433.249	21.210
19.520	286522.375	8.101f	10.032	0.681a	157.95	3769.80	433.110	21.210
19.530	286680.375	8.097f	10.037	0.690a	157.96	3770.68	432.972	21.210
19.540	286838.406	8.092f	10.043	0.699a	157.97	3771.55	432.834	21.211
19.550	286996.438	8.087f	10.048	0.708a	157.98	3772.43	432.696	21.211
19.560	287154.250	8.082f	10.053	0.718a	157.99	3773.30	432.559	21.211
19.570	287312.250	8.077f	10.058	0.727a	158.01	3774.18	432.421	21.211
19.580	287470.281	8.072f	10.064	0.736a	158.02	3775.05	432.284	21.211
19.590	287628.250	8.067f	10.069	0.745a	158.03	3775.93	432.147	21.211
19.600	287786.344	8.063f	10.074	0.755a	158.04	3776.81	432.009	21.211
19.610	287944.438	8.058f	10.079	0.764a	158.05	3777.68	431.872	21.212
19.620	288102.375	8.053f	10.085	0.773a	158.06	3778.56	431.735	21.212
19.630	288260.531	8.048f	10.090	0.782a	158.08	3779.43	431.599	21.212
19.640	288418.750	8.043f	10.095	0.791a	158.09	3780.31	431.462	21.212
19.650	288576.688	8.038f	10.100	0.801a	158.10	3781.18	431.326	21.212
19.660	288734.781	8.034f	10.105	0.810a	158.11	3782.06	431.189	21.212
19.670	288892.875	8.029f	10.111	0.819a	158.12	3782.93	431.053	21.213
19.680	289051.156	8.024f	10.116	0.828a	158.14	3783.81	430.917	21.213
19.690	289209.188	8.019f	10.121	0.838a	158.15	3784.68	430.781	21.213
19.700	289367.406	8.014f	10.126	0.847a	158.16	3785.56	430.645	21.213
19.710	289525.500	8.009f	10.132	0.856a	158.17	3786.43	430.509	21.213
19.720	289683.781	8.004f	10.137	0.865a	158.18	3787.31	430.373	21.214
19.730	289841.969	8.000f	10.142	0.874a	158.20	3788.18	430.238	21.214
19.740	290000.219	7.995f	10.147	0.884a	158.21	3789.06	430.102	21.214
19.750	290158.344	7.990f	10.153	0.893a	158.22	3789.93	429.967	21.214
19.760	290316.531	7.985f	10.158	0.902a	158.23	3790.81	429.832	21.215
19.770	290474.781	7.980f	10.163	0.911a	158.24	3791.68	429.697	21.215
19.780	290633.125	7.975f	10.168	0.920a	158.26	3792.56	429.562	21.215
19.790	290791.469	7.971f	10.173	0.930a	158.27	3793.44	429.427	21.215
19.800	290949.563	7.966f	10.179	0.939a	158.28	3794.31	429.293	21.216

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
19.810	291107.906	7.961f	10.184	0.948a	158.29	3795.18	429.158	21.216
19.820	291266.094	7.956f	10.189	0.957a	158.30	3796.06	429.024	21.216
19.830	291424.438	7.951f	10.194	0.966a	158.31	3796.94	428.890	21.216
19.840	291582.813	7.946f	10.200	0.976a	158.33	3797.81	428.756	21.217
19.850	291741.156	7.942f	10.205	0.985a	158.34	3798.68	428.622	21.217
19.860	291899.375	7.937f	10.210	0.994a	158.35	3799.60	428.492	21.217
19.870	292057.875	7.932f	10.215	1.002a	158.36	3800.51	428.362	21.218
19.880	292216.219	7.927f	10.221	1.011a	158.38	3801.42	428.233	21.218
19.890	292374.688	7.922f	10.226	1.020a	158.39	3802.33	428.103	21.218
19.900	292532.969	7.917f	10.231	1.028a	158.40	3803.24	427.974	21.219
19.910	292691.375	7.912f	10.236	1.037a	158.41	3804.15	427.845	21.219
19.920	292849.844	7.908f	10.242	1.046a	158.42	3805.06	427.716	21.219
19.930	293008.344	7.903f	10.247	1.055a	158.44	3805.97	427.587	21.220
19.940	293166.781	7.898f	10.252	1.063a	158.45	3806.88	427.458	21.220
19.950	293325.094	7.893f	10.257	1.072a	158.46	3807.79	427.330	21.220
19.960	293483.594	7.888f	10.262	1.081a	158.47	3808.71	427.201	21.221
19.970	293642.094	7.883f	10.268	1.090a	158.49	3809.62	427.073	21.221
19.980	293800.656	7.879f	10.273	1.098a	158.50	3810.53	426.944	21.221
19.990	293959.000	7.874f	10.278	1.107a	158.51	3811.44	426.816	21.222
20.000	294117.656	7.869f	10.283	1.116a	158.52	3812.35	426.688	21.222
20.010	294276.063	7.864f	10.289	1.122a	158.53	3813.16	426.549	21.223
20.020	294434.719	7.859f	10.294	1.129a	158.55	3813.98	426.411	21.223
20.030	294593.156	7.854f	10.299	1.135a	158.56	3814.79	426.272	21.223
20.040	294751.688	7.850f	10.304	1.142a	158.57	3815.61	426.134	21.223
20.050	294910.313	7.845f	10.310	1.148a	158.58	3816.42	425.995	21.224
20.060	295068.969	7.840f	10.315	1.154a	158.59	3817.24	425.857	21.224
20.070	295227.438	7.835f	10.320	1.161a	158.60	3818.05	425.720	21.224
20.080	295386.125	7.830f	10.325	1.167a	158.61	3818.86	425.582	21.225
20.090	295544.656	7.825f	10.331	1.174a	158.62	3819.68	425.444	21.225
20.100	295703.375	7.821f	10.336	1.180a	158.63	3820.49	425.306	21.225
20.110	295861.938	7.816f	10.341	1.187a	158.64	3821.31	425.169	21.226
20.120	296020.625	7.811f	10.346	1.193a	158.65	3822.12	425.032	21.226
20.130	296179.375	7.806f	10.351	1.200a	158.67	3822.94	424.894	21.226
20.140	296338.000	7.801f	10.357	1.206a	158.68	3823.75	424.757	21.227
20.150	296496.688	7.796f	10.362	1.213a	158.69	3824.57	424.621	21.227
20.160	296655.344	7.792f	10.367	1.219a	158.70	3825.38	424.484	21.228
20.170	296814.031	7.787f	10.372	1.225a	158.71	3826.19	424.347	21.228
20.180	296972.813	7.782f	10.378	1.232a	158.72	3827.01	424.211	21.228
20.190	297131.594	7.777f	10.383	1.238a	158.73	3827.82	424.074	21.229
20.200	297290.250	7.772f	10.388	1.245a	158.74	3828.64	423.938	21.229
20.210	297448.938	7.767f	10.393	1.251a	158.75	3829.45	423.802	21.230
20.220	297607.813	7.763f	10.399	1.258a	158.76	3830.27	423.666	21.230
20.230	297766.594	7.758f	10.404	1.264a	158.77	3831.08	423.530	21.230
20.240	297925.344	7.753f	10.409	1.271a	158.79	3831.90	423.394	21.231
20.250	298084.063	7.748f	10.414	1.277a	158.80	3832.71	423.259	21.231
20.260	298242.906	7.743f	10.420	1.283a	158.81	3833.53	423.123	21.232
20.270	298401.875	7.739f	10.425	1.290a	158.82	3834.34	422.988	21.232
20.280	298560.656	7.734f	10.430	1.296a	158.83	3835.15	422.853	21.232
20.290	298719.313	7.729f	10.435	1.303a	158.84	3835.97	422.718	21.233
20.300	298878.250	7.724f	10.441	1.309a	158.85	3836.78	422.583	21.233
20.310	299037.000	7.719f	10.446	1.316a	158.86	3837.60	422.448	21.234
20.320	299196.031	7.715f	10.451	1.322a	158.87	3838.41	422.313	21.234
20.330	299354.813	7.710f	10.456	1.328a	158.88	3839.23	422.179	21.235

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
20.340	299513.688	7.705f	10.462	1.335a	158.89	3840.05	422.046	21.235
20.350	299672.531	7.700f	10.467	1.341a	158.91	3840.88	421.912	21.236
20.360	299831.531	7.695f	10.472	1.347a	158.92	3841.70	421.779	21.236
20.370	299990.594	7.691f	10.477	1.354a	158.93	3842.52	421.645	21.237
20.380	300149.375	7.686f	10.482	1.360a	158.94	3843.34	421.512	21.237
20.390	300308.344	7.681f	10.488	1.366a	158.95	3844.16	421.379	21.238
20.400	300467.219	7.676f	10.493	1.373a	158.96	3844.98	421.246	21.238
20.410	300626.313	7.671f	10.498	1.379a	158.97	3845.80	421.113	21.239
20.420	300785.281	7.667f	10.503	1.386a	158.98	3846.62	420.980	21.239
20.430	300944.281	7.662f	10.509	1.392a	158.99	3847.44	420.848	21.240
20.440	301103.281	7.657f	10.514	1.398a	159.00	3848.27	420.715	21.240
20.450	301262.094	7.652f	10.519	1.405a	159.02	3849.08	420.583	21.241
20.460	301421.188	7.648f	10.524	1.411a	159.03	3849.91	420.451	21.241
20.470	301580.375	7.643f	10.530	1.417a	159.04	3850.73	420.318	21.242
20.480	301739.281	7.638f	10.535	1.424a	159.05	3851.55	420.187	21.242
20.490	301898.313	7.633f	10.540	1.430a	159.06	3852.37	420.055	21.243
20.500	302057.469	7.628f	10.545	1.436a	159.07	3853.19	419.923	21.244
20.510	302216.531	7.624f	10.551	1.443a	159.08	3854.01	419.791	21.244
20.520	302375.688	7.619f	10.556	1.449a	159.09	3854.83	419.660	21.245
20.530	302534.688	7.614f	10.561	1.455a	159.10	3855.65	419.529	21.245
20.540	302693.750	7.609f	10.566	1.462a	159.11	3856.48	419.398	21.246
20.550	302852.875	7.605f	10.572	1.468a	159.13	3857.30	419.266	21.246
20.560	303012.000	7.600f	10.577	1.474a	159.14	3858.12	419.135	21.247
20.570	303171.344	7.595f	10.582	1.481a	159.15	3858.94	419.004	21.248
20.580	303330.344	7.590f	10.587	1.487a	159.16	3859.76	418.874	21.248
20.590	303489.500	7.586f	10.593	1.493a	159.17	3860.58	418.743	21.249
20.600	303648.625	7.581f	10.598	1.500a	159.18	3861.40	418.613	21.249
20.610	303807.906	7.576f	10.603	1.506a	159.19	3862.22	418.482	21.250
20.620	303967.031	7.571f	10.608	1.512a	159.20	3863.05	418.352	21.251
20.630	304126.250	7.567f	10.614	1.519a	159.21	3863.87	418.222	21.251
20.640	304285.438	7.562f	10.619	1.525a	159.22	3864.69	418.092	21.252
20.650	304444.688	7.557f	10.624	1.531a	159.24	3865.51	417.962	21.253
20.660	304603.969	7.552f	10.629	1.538a	159.25	3866.33	417.832	21.253
20.670	304763.188	7.548f	10.635	1.544a	159.26	3867.15	417.703	21.254
20.680	304922.438	7.543f	10.640	1.550a	159.27	3867.97	417.573	21.255
20.690	305081.688	7.538f	10.645	1.557a	159.28	3868.79	417.444	21.255
20.700	305241.000	7.533f	10.650	1.563a	159.29	3869.62	417.315	21.256
20.710	305400.438	7.529f	10.656	1.569a	159.30	3870.44	417.186	21.257
20.720	305559.594	7.524f	10.661	1.575a	159.31	3871.26	417.057	21.257
20.730	305718.906	7.519f	10.666	1.582a	159.32	3872.08	416.928	21.258
20.740	305878.188	7.514f	10.671	1.588a	159.33	3872.90	416.799	21.259
20.750	306037.656	7.510f	10.676	1.594a	159.35	3873.73	416.670	21.259
20.760	306196.969	7.505f	10.682	1.601a	159.36	3874.55	416.542	21.260
20.770	306356.438	7.500f	10.687	1.607a	159.37	3875.37	416.413	21.261
20.780	306515.594	7.495f	10.692	1.613a	159.38	3876.19	416.285	21.261
20.790	306675.000	7.491f	10.697	1.620a	159.39	3877.01	416.157	21.262
20.800	306834.406	7.486f	10.703	1.626a	159.40	3877.83	416.029	21.263
20.810	306993.844	7.481f	10.708	1.632a	159.41	3878.65	415.901	21.264
20.820	307153.281	7.476f	10.713	1.639a	159.42	3879.47	415.773	21.264
20.830	307312.688	7.472f	10.718	1.645a	159.43	3880.30	415.646	21.265
20.840	307472.188	7.467f	10.724	1.651a	159.44	3881.12	415.518	21.266
20.850	307631.594	7.462f	10.729	1.658a	159.45	3881.94	415.391	21.266
20.860	307791.188	7.457f	10.734	1.664a	159.47	3882.76	415.263	21.267

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
20.870	307950.625	7.453f	10.739	1.670a	159.48	3883.58	415.136	21.268
20.880	308109.969	7.448f	10.745	1.676a	159.49	3884.41	415.009	21.269
20.890	308269.344	7.443f	10.750	1.683a	159.50	3885.23	414.882	21.270
20.900	308429.000	7.439f	10.755	1.689a	159.51	3886.05	414.755	21.270
20.910	308588.656	7.434f	10.760	1.695a	159.52	3886.87	414.628	21.271
20.920	308748.031	7.429f	10.766	1.702a	159.53	3887.69	414.502	21.272
20.930	308907.594	7.424f	10.771	1.708a	159.54	3888.51	414.375	21.273
20.940	309067.094	7.420f	10.776	1.714a	159.55	3889.34	414.249	21.273
20.950	309226.781	7.415f	10.781	1.721a	159.56	3890.16	414.123	21.274
20.960	309386.375	7.410f	10.787	1.727a	159.58	3890.98	413.996	21.275
20.970	309546.000	7.406f	10.792	1.733a	159.59	3891.80	413.870	21.276
20.980	309705.406	7.401f	10.797	1.739a	159.60	3892.62	413.745	21.277
20.990	309865.031	7.396f	10.802	1.746a	159.61	3893.45	413.619	21.277
21.000	310024.750	7.391f	10.808	1.752a	159.62	3894.27	413.493	21.278
21.010	310184.375	7.387f	10.813	1.758a	159.63	3895.10	413.369	21.279
21.020	310344.031	7.382f	10.818	1.764a	159.64	3895.93	413.244	21.280
21.030	310503.406	7.377f	10.823	1.770a	159.65	3896.77	413.121	21.281
21.040	310663.281	7.373f	10.829	1.777a	159.66	3897.60	412.996	21.282
21.050	310822.750	7.368f	10.834	1.783a	159.68	3898.43	412.873	21.282
21.060	310982.625	7.363f	10.839	1.789a	159.69	3899.27	412.749	21.283
21.070	311142.375	7.359f	10.844	1.795a	159.70	3900.10	412.625	21.284
21.080	311301.906	7.354f	10.850	1.801a	159.71	3900.94	412.502	21.285
21.090	311461.750	7.349f	10.855	1.807a	159.72	3901.77	412.378	21.286
21.100	311621.500	7.344f	10.860	1.814a	159.73	3902.60	412.255	21.287
21.110	311781.156	7.340f	10.865	1.820a	159.74	3903.44	412.132	21.288
21.120	311940.875	7.335f	10.871	1.826a	159.75	3904.27	412.008	21.288
21.130	312100.563	7.330f	10.876	1.832a	159.76	3905.10	411.886	21.289
21.140	312260.438	7.326f	10.881	1.838a	159.78	3905.93	411.762	21.290
21.150	312420.406	7.321f	10.886	1.844a	159.79	3906.77	411.640	21.291
21.160	312580.063	7.316f	10.892	1.850a	159.80	3907.60	411.517	21.292
21.170	312739.875	7.312f	10.897	1.856a	159.81	3908.44	411.395	21.293
21.180	312899.594	7.307f	10.902	1.863a	159.82	3909.27	411.272	21.294
21.190	313059.406	7.302f	10.907	1.869a	159.83	3910.10	411.150	21.295
21.200	313219.406	7.298f	10.913	1.875a	159.84	3910.94	411.028	21.296
21.210	313379.063	7.293f	10.918	1.881a	159.85	3911.77	410.906	21.296
21.220	313539.063	7.288f	10.923	1.887a	159.86	3912.61	410.784	21.297
21.230	313698.719	7.284f	10.928	1.893a	159.88	3913.44	410.662	21.298
21.240	313858.656	7.279f	10.934	1.899a	159.89	3914.27	410.540	21.299
21.250	314018.625	7.274f	10.939	1.906a	159.90	3915.11	410.418	21.300
21.260	314178.500	7.270f	10.944	1.912a	159.91	3915.94	410.297	21.301
21.270	314338.375	7.265f	10.949	1.918a	159.92	3916.77	410.176	21.302
21.280	314498.438	7.260f	10.955	1.924a	159.93	3917.61	410.054	21.303
21.290	314658.281	7.256f	10.960	1.930a	159.94	3918.44	409.933	21.304
21.300	314818.438	7.251f	10.965	1.936a	159.95	3919.27	409.812	21.305
21.310	314978.313	7.246f	10.970	1.942a	159.96	3920.11	409.691	21.306
21.320	315138.125	7.242f	10.976	1.948a	159.98	3920.94	409.570	21.307
21.330	315298.094	7.237f	10.981	1.955a	159.99	3921.78	409.449	21.308
21.340	315458.281	7.232f	10.986	1.961a	160.00	3922.61	409.329	21.309
21.350	315618.219	7.228f	10.991	1.967a	160.01	3923.44	409.208	21.310
21.360	315778.281	7.223f	10.997	1.973a	160.02	3924.28	409.088	21.311
21.370	315938.219	7.218f	11.002	1.979a	160.03	3925.11	408.967	21.312
21.380	316098.188	7.214f	11.007	1.985a	160.04	3925.95	408.847	21.313
21.390	316258.281	7.209f	11.012	1.991a	160.05	3926.78	408.727	21.314

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
21.410	316578.469	7.200f	11.023	2.004a	160.08	3928.45	408.487	21.316
21.420	316738.406	7.195f	11.028	2.010a	160.09	3929.28	408.367	21.317
21.430	316898.406	7.190f	11.033	2.016a	160.10	3930.12	408.248	21.318
21.440	317058.906	7.186f	11.039	2.022a	160.11	3930.95	408.128	21.319
21.450	317218.813	7.181f	11.044	2.028a	160.12	3931.78	408.009	21.320
21.460	317378.969	7.176f	11.049	2.034a	160.13	3932.65	407.893	21.321
21.470	317538.938	7.172f	11.054	2.039a	160.14	3933.52	407.778	21.322
21.480	317699.250	7.167f	11.060	2.045a	160.16	3934.39	407.662	21.323
21.490	317859.500	7.162f	11.065	2.051a	160.17	3935.26	407.547	21.324
21.500	318019.625	7.158f	11.070	2.056a	160.18	3936.13	407.432	21.325
21.510	318179.719	7.153f	11.075	2.062a	160.19	3937.00	407.317	21.326
21.520	318339.906	7.148f	11.081	2.068a	160.20	3937.88	407.202	21.327
21.530	318500.188	7.144f	11.086	2.073a	160.21	3938.74	407.086	21.328
21.540	318660.531	7.139f	11.091	2.079a	160.22	3939.61	406.972	21.329
21.550	318820.563	7.135f	11.096	2.085a	160.24	3940.48	406.857	21.330
21.560	318980.719	7.130f	11.102	2.090a	160.25	3941.35	406.743	21.332
21.570	319140.938	7.125f	11.107	2.096a	160.26	3942.22	406.628	21.333
21.580	319301.375	7.121f	11.112	2.102a	160.27	3943.10	406.514	21.334
21.590	319461.688	7.116f	11.117	2.107a	160.28	3943.96	406.399	21.335
21.600	319621.938	7.111f	11.123	2.113a	160.29	3944.84	406.285	21.336
21.610	319782.125	7.107f	11.128	2.119a	160.31	3945.70	406.171	21.337
21.620	319942.469	7.102f	11.133	2.124a	160.32	3946.58	406.057	21.338
21.630	320102.875	7.098f	11.139	2.130a	160.33	3947.45	405.943	21.339
21.640	320263.344	7.093f	11.144	2.136a	160.34	3948.32	405.829	21.340
21.650	320423.563	7.088f	11.149	2.141a	160.35	3949.19	405.716	21.342
21.660	320583.875	7.084f	11.154	2.147a	160.36	3950.04	405.601	21.343
21.670	320744.219	7.079f	11.160	2.153a	160.37	3950.90	405.486	21.344
21.680	320904.625	7.074f	11.165	2.159a	160.39	3951.75	405.371	21.345
21.690	321065.094	7.070f	11.170	2.165a	160.40	3952.61	405.256	21.346
21.700	321225.344	7.065f	11.175	2.171a	160.41	3953.46	405.141	21.347
21.710	321385.688	7.061f	11.181	2.176a	160.42	3954.32	405.027	21.348
21.720	321546.188	7.056f	11.186	2.182a	160.43	3955.17	404.912	21.350
21.730	321706.688	7.051f	11.191	2.188a	160.44	3956.03	404.798	21.351
21.740	321867.250	7.047f	11.196	2.194a	160.45	3956.88	404.683	21.352
21.750	322027.625	7.042f	11.202	2.200a	160.47	3957.74	404.569	21.353
21.760	322188.063	7.038f	11.207	2.206a	160.48	3958.59	404.455	21.354
21.770	322348.469	7.033f	11.212	2.211a	160.49	3959.45	404.341	21.355
21.780	322509.125	7.028f	11.217	2.217a	160.50	3960.30	404.227	21.357
21.790	322669.625	7.024f	11.223	2.223a	160.51	3961.16	404.113	21.358
21.800	322830.094	7.019f	11.228	2.229a	160.52	3962.01	403.999	21.359
21.810	322990.500	7.015f	11.233	2.235a	160.53	3962.87	403.886	21.360
21.820	323151.219	7.010f	11.238	2.241a	160.54	3963.72	403.772	21.361
21.830	323311.625	7.005f	11.244	2.246a	160.56	3964.58	403.659	21.362
21.840	323472.344	7.001f	11.249	2.252a	160.57	3965.44	403.545	21.364
21.850	323632.813	6.996f	11.254	2.258a	160.58	3966.29	403.432	21.365
21.860	323793.313	6.992f	11.259	2.264a	160.59	3967.15	403.319	21.366
21.870	323954.094	6.987f	11.265	2.270a	160.60	3968.00	403.206	21.367
21.880	324114.750	6.982f	11.270	2.276a	160.61	3968.86	403.093	21.369
21.890	324275.219	6.978f	11.275	2.281a	160.62	3969.71	402.981	21.370
21.900	324435.844	6.973f	11.280	2.287a	160.64	3970.57	402.868	21.371
21.910	324596.438	6.969f	11.286	2.293a	160.65	3971.42	402.755	21.372
21.920	324757.219	6.964f	11.291	2.299a	160.66	3972.28	402.643	21.374
21.930	324917.906	6.959f	11.296	2.305a	160.67	3973.14	402.530	21.375

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	KML (m)	KMT (m)
21.950	325239.250	6.950f	11.307	2.316a	160.69	3974.85	402.306	21.377
21.960	325399.875	6.946f	11.312	2.322a	160.70	3975.70	402.194	21.379
21.970	325560.469	6.941f	11.317	2.328a	160.72	3976.56	402.082	21.380
21.980	325721.219	6.937f	11.323	2.334a	160.73	3977.41	401.970	21.381
21.990	325882.094	6.932f	11.328	2.340a	160.74	3978.27	401.858	21.382
22.000	326042.781	6.927f	11.333	2.345a	160.75	3979.13	401.746	21.384

6.3. Hull Form Coefficients

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
5.000	66558.06	0.785	0.780	0.994	0.821	0.950	3.526	16505.81
5.010	66698.21	0.785	0.781	0.994	0.822	0.950	3.524	16512.84
5.020	66838.36	0.785	0.781	0.994	0.822	0.950	3.522	16519.87
5.030	66978.51	0.785	0.781	0.994	0.822	0.950	3.520	16526.90
5.040	67118.66	0.786	0.781	0.994	0.822	0.950	3.518	16533.93
5.050	67258.85	0.786	0.781	0.994	0.822	0.950	3.515	16540.96
5.060	67399.04	0.786	0.781	0.994	0.822	0.950	3.513	16547.98
5.070	67539.27	0.786	0.781	0.994	0.822	0.950	3.511	16555.01
5.080	67679.47	0.786	0.781	0.994	0.822	0.950	3.509	16562.04
5.090	67819.73	0.786	0.781	0.994	0.822	0.950	3.507	16569.06
5.100	67959.91	0.786	0.781	0.994	0.822	0.950	3.505	16576.07
5.110	68100.20	0.786	0.781	0.994	0.822	0.950	3.502	16583.09
5.120	68240.47	0.786	0.781	0.994	0.822	0.950	3.500	16590.11
5.130	68380.77	0.786	0.781	0.994	0.822	0.950	3.498	16597.13
5.140	68521.09	0.786	0.782	0.994	0.823	0.950	3.496	16604.14
5.150	68661.38	0.786	0.782	0.994	0.823	0.950	3.494	16611.16
5.160	68801.70	0.786	0.782	0.994	0.823	0.950	3.492	16618.18
5.170	68942.02	0.786	0.782	0.994	0.823	0.950	3.490	16625.20
5.180	69082.39	0.787	0.782	0.994	0.823	0.950	3.488	16632.22
5.190	69222.77	0.787	0.782	0.994	0.823	0.950	3.486	16639.23
5.200	69363.10	0.787	0.782	0.994	0.823	0.950	3.484	16646.25
5.210	69503.50	0.787	0.782	0.994	0.823	0.950	3.482	16653.27
5.220	69643.89	0.787	0.782	0.994	0.823	0.950	3.480	16660.29
5.230	69784.32	0.787	0.782	0.994	0.823	0.950	3.477	16667.30
5.240	69924.75	0.787	0.782	0.994	0.823	0.950	3.475	16674.32
5.250	70065.20	0.787	0.782	0.994	0.823	0.950	3.473	16681.34
5.260	70205.66	0.787	0.782	0.994	0.823	0.950	3.471	16688.36
5.270	70346.08	0.787	0.783	0.994	0.824	0.950	3.469	16695.38
5.280	70486.59	0.787	0.783	0.994	0.824	0.950	3.467	16702.39
5.290	70627.08	0.787	0.783	0.994	0.824	0.950	3.465	16709.40
5.300	70767.59	0.787	0.783	0.994	0.824	0.950	3.463	16716.42
5.310	70908.09	0.787	0.783	0.994	0.824	0.950	3.461	16723.43
5.320	71048.63	0.788	0.783	0.994	0.824	0.950	3.459	16730.45
5.330	71189.16	0.788	0.783	0.994	0.824	0.950	3.458	16737.46
5.340	71329.72	0.788	0.783	0.994	0.824	0.950	3.456	16744.46
5.350	71470.30	0.788	0.783	0.994	0.824	0.950	3.454	16751.48
5.360	71610.90	0.788	0.783	0.994	0.824	0.950	3.452	16758.49
5.370	71751.47	0.788	0.783	0.994	0.824	0.950	3.450	16765.51
5.380	71892.07	0.788	0.783	0.994	0.824	0.950	3.448	16772.52
5.390	72032.70	0.788	0.783	0.994	0.824	0.950	3.446	16779.53
5.400	72173.34	0.788	0.784	0.994	0.825	0.950	3.444	16786.54
5.410	72313.98	0.788	0.784	0.994	0.825	0.950	3.442	16793.55
5.420	72454.67	0.788	0.784	0.994	0.825	0.950	3.440	16800.56
5.430	72595.32	0.788	0.784	0.994	0.825	0.950	3.438	16807.57
5.440	72736.00	0.788	0.784	0.994	0.825	0.950	3.436	16814.59
5.450	72876.68	0.788	0.784	0.994	0.825	0.950	3.434	16821.60
5.460	73017.42	0.788	0.784	0.994	0.825	0.950	3.433	16828.61
5.470	73158.16	0.789	0.784	0.994	0.825	0.950	3.431	16835.62
5.480	73298.89	0.789	0.784	0.994	0.825	0.950	3.429	16842.63
5.490	73439.63	0.789	0.784	0.994	0.825	0.950	3.427	16849.64

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
5.500	73580.38	0.789	0.784	0.994	0.825	0.950	3.425	16856.65
5.510	73721.17	0.789	0.784	0.994	0.825	0.950	3.423	16863.67
5.520	73862.00	0.789	0.784	0.994	0.825	0.950	3.421	16870.68
5.530	74002.77	0.789	0.785	0.994	0.826	0.950	3.420	16877.69
5.540	74143.58	0.789	0.785	0.994	0.826	0.950	3.418	16884.70
5.550	74284.41	0.789	0.785	0.994	0.826	0.950	3.416	16891.72
5.560	74425.27	0.789	0.785	0.994	0.826	0.950	3.414	16898.73
5.570	74566.13	0.789	0.785	0.994	0.826	0.950	3.412	16905.74
5.580	74707.02	0.789	0.785	0.994	0.826	0.950	3.410	16912.75
5.590	74847.84	0.789	0.785	0.994	0.826	0.950	3.409	16919.76
5.600	74988.75	0.789	0.785	0.994	0.826	0.950	3.407	16926.78
5.610	75129.65	0.789	0.785	0.994	0.826	0.950	3.405	16933.79
5.620	75270.58	0.790	0.785	0.995	0.826	0.950	3.403	16940.80
5.630	75411.49	0.790	0.785	0.995	0.826	0.950	3.402	16947.81
5.640	75552.48	0.790	0.785	0.995	0.826	0.950	3.400	16954.82
5.650	75693.39	0.790	0.785	0.995	0.826	0.950	3.398	16961.84
5.660	75834.37	0.790	0.786	0.995	0.827	0.950	3.396	16968.84
5.670	75975.34	0.790	0.786	0.995	0.827	0.950	3.395	16975.86
5.680	76116.37	0.790	0.786	0.995	0.827	0.950	3.393	16982.87
5.690	76257.35	0.790	0.786	0.995	0.827	0.950	3.391	16989.88
5.700	76398.41	0.790	0.786	0.995	0.827	0.950	3.389	16996.90
5.710	76539.41	0.790	0.786	0.995	0.827	0.950	3.388	17003.91
5.720	76680.46	0.790	0.786	0.995	0.827	0.950	3.386	17010.92
5.730	76821.53	0.790	0.786	0.995	0.827	0.950	3.384	17017.93
5.740	76962.60	0.790	0.786	0.995	0.827	0.950	3.382	17024.94
5.750	77103.71	0.790	0.786	0.995	0.827	0.950	3.381	17031.96
5.760	77244.78	0.790	0.786	0.995	0.827	0.950	3.379	17038.97
5.770	77385.88	0.791	0.786	0.995	0.827	0.950	3.377	17045.97
5.780	77527.03	0.791	0.786	0.995	0.827	0.950	3.376	17052.99
5.790	77668.15	0.791	0.786	0.995	0.827	0.950	3.374	17059.99
5.800	77809.34	0.791	0.787	0.995	0.828	0.950	3.372	17067.01
5.810	77950.48	0.791	0.787	0.995	0.828	0.950	3.371	17074.03
5.820	78091.65	0.791	0.787	0.995	0.828	0.950	3.369	17081.04
5.830	78232.84	0.791	0.787	0.995	0.828	0.950	3.367	17088.04
5.840	78374.05	0.791	0.787	0.995	0.828	0.950	3.366	17095.06
5.850	78515.26	0.791	0.787	0.995	0.828	0.950	3.364	17102.07
5.860	78656.48	0.791	0.787	0.995	0.828	0.950	3.362	17109.08
5.870	78797.76	0.791	0.787	0.995	0.828	0.950	3.361	17116.10
5.880	78938.98	0.791	0.787	0.995	0.828	0.950	3.359	17123.11
5.890	79080.26	0.791	0.787	0.995	0.828	0.950	3.357	17130.12
5.900	79221.52	0.791	0.787	0.995	0.828	0.950	3.356	17137.13
5.910	79362.83	0.791	0.787	0.995	0.828	0.950	3.354	17144.14
5.920	79504.16	0.791	0.787	0.995	0.828	0.950	3.353	17151.15
5.930	79645.45	0.792	0.787	0.995	0.829	0.950	3.351	17158.16
5.940	79786.77	0.792	0.787	0.995	0.829	0.950	3.349	17165.18
5.950	79928.12	0.792	0.788	0.995	0.829	0.950	3.348	17172.19
5.960	80069.51	0.792	0.788	0.995	0.829	0.950	3.346	17179.20
5.970	80210.88	0.792	0.788	0.995	0.829	0.950	3.345	17186.21
5.980	80352.25	0.792	0.788	0.995	0.829	0.950	3.343	17193.23
5.990	80493.64	0.792	0.788	0.995	0.829	0.950	3.341	17200.24
6.000	80635.05	0.792	0.788	0.995	0.829	0.950	3.340	17207.25
6.010	80776.48	0.792	0.788	0.995	0.829	0.950	3.338	17214.18
6.020	80917.95	0.792	0.788	0.995	0.829	0.950	3.337	17221.11

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
6.030	81059.35	0.792	0.788	0.995	0.829	0.950	3.335	17228.05
6.040	81200.82	0.792	0.788	0.995	0.829	0.950	3.334	17234.98
6.050	81342.25	0.792	0.788	0.995	0.829	0.950	3.332	17241.92
6.060	81483.73	0.792	0.788	0.995	0.829	0.950	3.330	17248.86
6.070	81625.23	0.792	0.788	0.995	0.830	0.950	3.329	17255.79
6.080	81766.73	0.792	0.788	0.995	0.830	0.950	3.327	17262.72
6.090	81908.27	0.793	0.789	0.995	0.830	0.950	3.326	17269.66
6.100	82049.69	0.793	0.789	0.995	0.830	0.950	3.324	17276.59
6.110	82191.27	0.793	0.789	0.995	0.830	0.950	3.323	17283.53
6.120	82332.83	0.793	0.789	0.995	0.830	0.950	3.321	17290.46
6.130	82474.36	0.793	0.789	0.995	0.830	0.950	3.320	17297.40
6.140	82615.91	0.793	0.789	0.995	0.830	0.950	3.318	17304.33
6.150	82757.50	0.793	0.789	0.995	0.830	0.950	3.317	17311.27
6.160	82899.05	0.793	0.789	0.995	0.830	0.951	3.315	17318.20
6.170	83040.65	0.793	0.789	0.995	0.830	0.951	3.314	17325.13
6.180	83182.23	0.793	0.789	0.995	0.830	0.951	3.312	17332.07
6.190	83323.88	0.793	0.789	0.995	0.830	0.951	3.311	17339.01
6.200	83465.48	0.793	0.789	0.995	0.830	0.951	3.309	17345.94
6.210	83607.09	0.793	0.789	0.995	0.830	0.951	3.308	17352.87
6.220	83748.73	0.793	0.789	0.995	0.830	0.951	3.306	17359.80
6.230	83890.38	0.793	0.789	0.995	0.830	0.951	3.305	17366.74
6.240	84032.09	0.793	0.790	0.995	0.831	0.951	3.303	17373.68
6.250	84173.73	0.793	0.790	0.995	0.831	0.951	3.302	17380.61
6.260	84315.47	0.794	0.790	0.995	0.831	0.951	3.300	17387.54
6.270	84457.12	0.794	0.790	0.995	0.831	0.951	3.299	17394.48
6.280	84598.84	0.794	0.790	0.995	0.831	0.951	3.297	17401.42
6.290	84740.52	0.794	0.790	0.995	0.831	0.951	3.296	17408.35
6.300	84882.28	0.794	0.790	0.995	0.831	0.951	3.295	17415.29
6.310	85024.03	0.794	0.790	0.995	0.831	0.951	3.293	17422.22
6.320	85165.75	0.794	0.790	0.995	0.831	0.951	3.292	17429.15
6.330	85307.49	0.794	0.790	0.995	0.831	0.951	3.290	17436.09
6.340	85449.27	0.794	0.790	0.995	0.831	0.951	3.289	17443.02
6.350	85591.07	0.794	0.790	0.995	0.831	0.951	3.287	17449.95
6.360	85732.85	0.794	0.790	0.995	0.831	0.951	3.286	17456.88
6.370	85874.60	0.794	0.790	0.995	0.831	0.951	3.285	17463.81
6.380	86016.47	0.794	0.790	0.995	0.831	0.951	3.283	17470.74
6.390	86158.25	0.794	0.790	0.995	0.831	0.951	3.282	17477.67
6.400	86300.10	0.794	0.791	0.995	0.832	0.951	3.280	17484.60
6.410	86441.96	0.794	0.791	0.995	0.832	0.951	3.279	17491.53
6.420	86583.78	0.794	0.791	0.995	0.832	0.951	3.278	17498.46
6.430	86725.67	0.795	0.791	0.995	0.832	0.951	3.276	17505.39
6.440	86867.49	0.795	0.791	0.995	0.832	0.951	3.275	17512.31
6.450	87009.38	0.795	0.791	0.995	0.832	0.951	3.274	17519.24
6.460	87151.27	0.795	0.791	0.995	0.832	0.951	3.272	17526.17
6.470	87293.20	0.795	0.791	0.995	0.832	0.951	3.271	17533.09
6.480	87435.13	0.795	0.791	0.995	0.832	0.951	3.269	17540.02
6.490	87577.01	0.795	0.791	0.995	0.832	0.951	3.268	17546.95
6.500	87718.95	0.795	0.791	0.995	0.832	0.951	3.267	17553.87
6.510	87860.87	0.795	0.791	0.995	0.832	0.951	3.265	17560.80
6.520	88002.84	0.795	0.791	0.995	0.832	0.951	3.264	17567.72
6.530	88144.84	0.795	0.791	0.995	0.832	0.951	3.263	17574.64
6.540	88286.73	0.795	0.791	0.995	0.832	0.951	3.261	17581.57
6.550	88428.77	0.795	0.791	0.995	0.832	0.951	3.260	17588.49

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
6.560	88570.75	0.795	0.792	0.995	0.832	0.951	3.259	17595.42
6.570	88712.77	0.795	0.792	0.995	0.833	0.951	3.257	17602.34
6.580	88854.77	0.795	0.792	0.995	0.833	0.951	3.256	17609.26
6.590	88996.80	0.795	0.792	0.995	0.833	0.951	3.255	17616.18
6.600	89138.85	0.796	0.792	0.995	0.833	0.951	3.253	17623.11
6.610	89280.86	0.796	0.792	0.995	0.833	0.951	3.252	17630.03
6.620	89422.92	0.796	0.792	0.995	0.833	0.951	3.251	17636.96
6.630	89565.01	0.796	0.792	0.995	0.833	0.951	3.249	17643.88
6.640	89707.09	0.796	0.792	0.995	0.833	0.951	3.248	17650.80
6.650	89849.17	0.796	0.792	0.995	0.833	0.951	3.247	17657.72
6.660	89991.27	0.796	0.792	0.995	0.833	0.951	3.246	17664.65
6.670	90133.37	0.796	0.792	0.995	0.833	0.951	3.244	17671.57
6.680	90275.48	0.796	0.792	0.995	0.833	0.951	3.243	17678.50
6.690	90417.63	0.796	0.792	0.995	0.833	0.951	3.242	17685.42
6.700	90559.75	0.796	0.792	0.995	0.833	0.951	3.240	17692.34
6.710	90701.90	0.796	0.792	0.995	0.833	0.951	3.239	17699.27
6.720	90844.07	0.796	0.793	0.995	0.833	0.951	3.238	17706.19
6.730	90986.21	0.796	0.793	0.995	0.834	0.951	3.237	17713.11
6.740	91128.41	0.796	0.793	0.995	0.834	0.951	3.235	17720.04
6.750	91270.63	0.796	0.793	0.995	0.834	0.951	3.234	17726.96
6.760	91412.79	0.796	0.793	0.995	0.834	0.951	3.233	17733.89
6.770	91555.04	0.796	0.793	0.995	0.834	0.951	3.232	17740.81
6.780	91697.21	0.797	0.793	0.995	0.834	0.951	3.230	17747.73
6.790	91839.48	0.797	0.793	0.995	0.834	0.951	3.229	17754.65
6.800	91981.70	0.797	0.793	0.995	0.834	0.951	3.228	17761.58
6.810	92123.95	0.797	0.793	0.995	0.834	0.951	3.227	17768.50
6.820	92266.24	0.797	0.793	0.995	0.834	0.951	3.225	17775.42
6.830	92408.45	0.797	0.793	0.995	0.834	0.951	3.224	17782.35
6.840	92550.77	0.797	0.793	0.995	0.834	0.951	3.223	17789.27
6.850	92693.06	0.797	0.793	0.995	0.834	0.951	3.222	17796.20
6.860	92835.38	0.797	0.793	0.996	0.834	0.951	3.220	17803.12
6.870	92977.70	0.797	0.793	0.996	0.834	0.951	3.219	17810.04
6.880	93120.02	0.797	0.794	0.996	0.834	0.951	3.218	17816.96
6.890	93262.35	0.797	0.794	0.996	0.834	0.951	3.217	17823.89
6.900	93404.67	0.797	0.794	0.996	0.835	0.951	3.216	17830.81
6.910	93547.02	0.797	0.794	0.996	0.835	0.951	3.214	17837.74
6.920	93689.40	0.797	0.794	0.996	0.835	0.951	3.213	17844.65
6.930	93831.78	0.797	0.794	0.996	0.835	0.951	3.212	17851.57
6.940	93974.17	0.797	0.794	0.996	0.835	0.951	3.211	17858.50
6.950	94116.52	0.797	0.794	0.996	0.835	0.951	3.210	17865.42
6.960	94258.97	0.798	0.794	0.996	0.835	0.951	3.208	17872.34
6.970	94401.37	0.798	0.794	0.996	0.835	0.951	3.207	17879.25
6.980	94543.77	0.798	0.794	0.996	0.835	0.951	3.206	17886.17
6.990	94686.23	0.798	0.794	0.996	0.835	0.951	3.205	17893.10
7.000	94828.68	0.798	0.794	0.996	0.835	0.951	3.204	17900.01
7.010	94971.11	0.798	0.794	0.996	0.835	0.951	3.203	17906.90
7.020	95113.58	0.798	0.794	0.996	0.835	0.951	3.201	17913.79
7.030	95256.08	0.798	0.794	0.996	0.835	0.951	3.200	17920.67
7.040	95398.55	0.798	0.794	0.996	0.835	0.951	3.199	17927.56
7.050	95541.01	0.798	0.795	0.996	0.835	0.951	3.198	17934.45
7.060	95683.50	0.798	0.795	0.996	0.835	0.951	3.197	17941.33
7.070	95826.00	0.798	0.795	0.996	0.835	0.951	3.196	17948.21
7.080	95968.52	0.798	0.795	0.996	0.836	0.951	3.195	17955.10

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
7.090	96111.06	0.798	0.795	0.996	0.836	0.951	3.193	17961.99
7.100	96253.57	0.798	0.795	0.996	0.836	0.951	3.192	17968.87
7.110	96396.15	0.798	0.795	0.996	0.836	0.951	3.191	17975.75
7.120	96538.67	0.798	0.795	0.996	0.836	0.951	3.190	17982.64
7.130	96681.22	0.798	0.795	0.996	0.836	0.951	3.189	17989.52
7.140	96823.79	0.798	0.795	0.996	0.836	0.951	3.188	17996.41
7.150	96966.38	0.799	0.795	0.996	0.836	0.951	3.187	18003.29
7.160	97108.98	0.799	0.795	0.996	0.836	0.951	3.185	18010.18
7.170	97251.51	0.799	0.795	0.996	0.836	0.951	3.184	18017.06
7.180	97394.16	0.799	0.795	0.996	0.836	0.951	3.183	18023.95
7.190	97536.73	0.799	0.795	0.996	0.836	0.951	3.182	18030.84
7.200	97679.33	0.799	0.795	0.996	0.836	0.951	3.181	18037.72
7.210	97822.02	0.799	0.795	0.996	0.836	0.951	3.180	18044.60
7.220	97964.62	0.799	0.795	0.996	0.836	0.951	3.179	18051.48
7.230	98107.28	0.799	0.796	0.996	0.836	0.951	3.178	18058.37
7.240	98249.92	0.799	0.796	0.996	0.836	0.951	3.177	18065.26
7.250	98392.61	0.799	0.796	0.996	0.836	0.951	3.175	18072.14
7.260	98535.29	0.799	0.796	0.996	0.836	0.951	3.174	18079.03
7.270	98677.91	0.799	0.796	0.996	0.837	0.951	3.173	18085.91
7.280	98820.68	0.799	0.796	0.996	0.837	0.951	3.172	18092.80
7.290	98963.30	0.799	0.796	0.996	0.837	0.951	3.171	18099.68
7.300	99106.06	0.799	0.796	0.996	0.837	0.951	3.170	18106.57
7.310	99248.79	0.799	0.796	0.996	0.837	0.951	3.169	18113.45
7.320	99391.48	0.799	0.796	0.996	0.837	0.951	3.168	18120.34
7.330	99534.25	0.799	0.796	0.996	0.837	0.951	3.167	18127.23
7.340	99676.94	0.800	0.796	0.996	0.837	0.951	3.166	18134.11
7.350	99819.72	0.800	0.796	0.996	0.837	0.951	3.165	18140.99
7.360	99962.45	0.800	0.796	0.996	0.837	0.951	3.164	18147.88
7.370	100105.21	0.800	0.796	0.996	0.837	0.951	3.163	18154.76
7.380	100248.04	0.800	0.796	0.996	0.837	0.951	3.162	18161.65
7.390	100390.77	0.800	0.796	0.996	0.837	0.951	3.160	18168.53
7.400	100533.60	0.800	0.796	0.996	0.837	0.951	3.159	18175.42
7.410	100676.40	0.800	0.797	0.996	0.837	0.951	3.158	18182.30
7.420	100819.25	0.800	0.797	0.996	0.837	0.951	3.157	18189.19
7.430	100962.03	0.800	0.797	0.996	0.837	0.951	3.156	18196.08
7.440	101104.85	0.800	0.797	0.996	0.837	0.951	3.155	18202.96
7.450	101247.72	0.800	0.797	0.996	0.837	0.951	3.154	18209.84
7.460	101390.55	0.800	0.797	0.996	0.837	0.951	3.153	18216.72
7.470	101533.43	0.800	0.797	0.996	0.838	0.951	3.152	18223.61
7.480	101676.30	0.800	0.797	0.996	0.838	0.951	3.151	18230.50
7.490	101819.14	0.800	0.797	0.996	0.838	0.951	3.150	18237.38
7.500	101962.05	0.800	0.797	0.996	0.838	0.951	3.149	18244.27
7.510	102104.91	0.800	0.797	0.996	0.838	0.951	3.148	18251.15
7.520	102247.81	0.800	0.797	0.996	0.838	0.951	3.147	18258.04
7.530	102390.73	0.800	0.797	0.996	0.838	0.951	3.146	18264.93
7.540	102533.63	0.801	0.797	0.996	0.838	0.951	3.145	18271.80
7.550	102676.59	0.801	0.797	0.996	0.838	0.951	3.144	18278.69
7.560	102819.45	0.801	0.797	0.996	0.838	0.951	3.143	18285.58
7.570	102962.45	0.801	0.797	0.996	0.838	0.951	3.142	18292.46
7.580	103105.41	0.801	0.797	0.996	0.838	0.951	3.141	18299.35
7.590	103248.40	0.801	0.798	0.996	0.838	0.951	3.140	18306.23
7.600	103391.37	0.801	0.798	0.996	0.838	0.952	3.139	18313.12
7.610	103534.34	0.801	0.798	0.996	0.838	0.952	3.138	18320.00

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
7.620	103677.30	0.801	0.798	0.996	0.838	0.952	3.137	18326.89
7.630	103820.30	0.801	0.798	0.996	0.838	0.952	3.136	18333.77
7.640	103963.30	0.801	0.798	0.996	0.838	0.952	3.135	18340.66
7.650	104106.34	0.801	0.798	0.996	0.838	0.952	3.134	18347.54
7.660	104249.31	0.801	0.798	0.996	0.839	0.952	3.133	18354.43
7.670	104392.41	0.801	0.798	0.996	0.839	0.952	3.132	18361.31
7.680	104535.41	0.801	0.798	0.996	0.839	0.952	3.131	18368.20
7.690	104678.46	0.801	0.798	0.996	0.839	0.952	3.130	18375.08
7.700	104821.52	0.801	0.798	0.996	0.839	0.952	3.129	18381.97
7.710	104964.59	0.801	0.798	0.996	0.839	0.952	3.128	18388.85
7.720	105107.70	0.801	0.798	0.996	0.839	0.952	3.127	18395.74
7.730	105250.71	0.801	0.798	0.996	0.839	0.952	3.126	18402.62
7.740	105393.86	0.802	0.798	0.996	0.839	0.952	3.125	18409.50
7.750	105536.95	0.802	0.798	0.996	0.839	0.952	3.125	18416.39
7.760	105680.06	0.802	0.798	0.996	0.839	0.952	3.124	18423.28
7.770	105823.20	0.802	0.798	0.996	0.839	0.952	3.123	18430.16
7.780	105966.29	0.802	0.799	0.996	0.839	0.952	3.122	18437.05
7.790	106109.47	0.802	0.799	0.996	0.839	0.952	3.121	18443.93
7.800	106252.57	0.802	0.799	0.996	0.839	0.952	3.120	18450.82
7.810	106395.72	0.802	0.799	0.996	0.839	0.952	3.119	18457.70
7.820	106538.91	0.802	0.799	0.996	0.839	0.952	3.118	18464.59
7.830	106682.07	0.802	0.799	0.996	0.839	0.952	3.117	18471.47
7.840	106825.25	0.802	0.799	0.996	0.839	0.952	3.116	18478.35
7.850	106968.42	0.802	0.799	0.996	0.839	0.952	3.115	18485.24
7.860	107111.64	0.802	0.799	0.996	0.840	0.952	3.114	18492.13
7.870	107254.82	0.802	0.799	0.996	0.840	0.952	3.113	18499.01
7.880	107398.02	0.802	0.799	0.996	0.840	0.952	3.112	18505.89
7.890	107541.26	0.802	0.799	0.996	0.840	0.952	3.111	18512.78
7.900	107684.46	0.802	0.799	0.996	0.840	0.952	3.111	18519.67
7.910	107827.76	0.802	0.799	0.996	0.840	0.952	3.110	18526.55
7.920	107970.99	0.802	0.799	0.996	0.840	0.952	3.109	18533.43
7.930	108114.20	0.802	0.799	0.996	0.840	0.952	3.108	18540.32
7.940	108257.55	0.802	0.799	0.996	0.840	0.952	3.107	18547.20
7.950	108400.76	0.803	0.799	0.996	0.840	0.952	3.106	18554.10
7.960	108544.07	0.803	0.799	0.996	0.840	0.952	3.105	18560.98
7.970	108687.36	0.803	0.799	0.996	0.840	0.952	3.104	18567.86
7.980	108830.66	0.803	0.800	0.996	0.840	0.952	3.103	18574.75
7.990	108973.98	0.803	0.800	0.996	0.840	0.952	3.102	18581.63
8.000	109117.27	0.803	0.800	0.996	0.840	0.952	3.102	18588.52
8.010	109260.63	0.803	0.800	0.996	0.840	0.952	3.101	18595.38
8.020	109403.93	0.803	0.800	0.996	0.840	0.952	3.100	18602.22
8.030	109547.28	0.803	0.800	0.996	0.840	0.952	3.099	18609.08
8.040	109690.64	0.803	0.800	0.996	0.840	0.952	3.098	18615.93
8.050	109834.01	0.803	0.800	0.996	0.840	0.952	3.097	18622.79
8.060	109977.37	0.803	0.800	0.996	0.841	0.952	3.096	18629.64
8.070	110120.70	0.803	0.800	0.996	0.841	0.952	3.095	18636.50
8.080	110264.10	0.803	0.800	0.996	0.841	0.952	3.094	18643.35
8.090	110407.49	0.803	0.800	0.996	0.841	0.952	3.094	18650.21
8.100	110550.86	0.803	0.800	0.996	0.841	0.952	3.093	18657.06
8.110	110694.30	0.803	0.800	0.996	0.841	0.952	3.092	18663.92
8.120	110837.63	0.803	0.800	0.996	0.841	0.952	3.091	18670.77
8.130	110981.10	0.803	0.800	0.996	0.841	0.952	3.090	18677.63
8.140	111124.50	0.803	0.800	0.996	0.841	0.952	3.089	18684.48

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
8.150	111267.93	0.803	0.800	0.996	0.841	0.952	3.088	18691.34
8.160	111411.37	0.803	0.800	0.996	0.841	0.952	3.088	18698.19
8.170	111554.79	0.804	0.801	0.996	0.841	0.952	3.087	18705.03
8.180	111698.26	0.804	0.801	0.996	0.841	0.952	3.086	18711.88
8.190	111841.71	0.804	0.801	0.996	0.841	0.952	3.085	18718.72
8.200	111985.16	0.804	0.801	0.996	0.841	0.952	3.084	18725.57
8.210	112128.63	0.804	0.801	0.996	0.841	0.952	3.083	18732.41
8.220	112272.06	0.804	0.801	0.996	0.841	0.952	3.082	18739.25
8.230	112415.57	0.804	0.801	0.996	0.841	0.952	3.082	18746.10
8.240	112559.07	0.804	0.801	0.996	0.841	0.952	3.081	18752.95
8.250	112702.56	0.804	0.801	0.996	0.841	0.952	3.080	18759.79
8.260	112846.07	0.804	0.801	0.996	0.841	0.952	3.079	18766.64
8.270	112989.56	0.804	0.801	0.996	0.841	0.952	3.078	18773.48
8.280	113133.11	0.804	0.801	0.996	0.841	0.952	3.077	18780.33
8.290	113276.61	0.804	0.801	0.996	0.841	0.952	3.077	18787.18
8.300	113420.16	0.804	0.801	0.996	0.842	0.952	3.076	18794.02
8.310	113563.72	0.804	0.801	0.996	0.842	0.952	3.075	18800.87
8.320	113707.21	0.804	0.801	0.996	0.842	0.952	3.074	18807.71
8.330	113850.82	0.804	0.801	0.996	0.842	0.952	3.073	18814.56
8.340	113994.36	0.804	0.801	0.996	0.842	0.952	3.072	18821.40
8.350	114137.93	0.804	0.801	0.996	0.842	0.952	3.072	18828.25
8.360	114281.49	0.804	0.801	0.996	0.842	0.952	3.071	18835.09
8.370	114425.03	0.804	0.801	0.996	0.842	0.952	3.070	18841.94
8.380	114568.70	0.804	0.802	0.996	0.842	0.952	3.069	18848.79
8.390	114712.23	0.805	0.802	0.996	0.842	0.952	3.068	18855.63
8.400	114855.86	0.805	0.802	0.996	0.842	0.952	3.068	18862.47
8.410	114999.46	0.805	0.802	0.996	0.842	0.953	3.067	18869.32
8.420	115143.12	0.805	0.802	0.996	0.842	0.953	3.066	18876.17
8.430	115286.74	0.805	0.802	0.996	0.842	0.953	3.065	18883.02
8.440	115430.31	0.805	0.802	0.996	0.842	0.953	3.064	18889.86
8.450	115573.99	0.805	0.802	0.996	0.842	0.953	3.064	18896.70
8.460	115717.59	0.805	0.802	0.996	0.841	0.953	3.063	18903.55
8.470	115861.28	0.805	0.802	0.996	0.841	0.953	3.062	18910.39
8.480	116004.95	0.805	0.802	0.996	0.841	0.953	3.061	18917.24
8.490	116148.54	0.805	0.802	0.996	0.841	0.953	3.060	18924.09
8.500	116292.28	0.805	0.802	0.996	0.841	0.953	3.060	18930.93
8.510	116435.95	0.805	0.802	0.996	0.841	0.953	3.059	18937.78
8.520	116579.63	0.805	0.802	0.996	0.841	0.953	3.058	18944.62
8.530	116723.34	0.805	0.802	0.996	0.841	0.954	3.057	18951.47
8.540	116866.99	0.805	0.802	0.996	0.841	0.954	3.057	18958.31
8.550	117010.77	0.805	0.802	0.996	0.841	0.954	3.056	18965.16
8.560	117154.40	0.805	0.802	0.996	0.841	0.954	3.055	18972.00
8.570	117298.20	0.805	0.802	0.996	0.841	0.954	3.054	18978.85
8.580	117441.88	0.805	0.802	0.996	0.841	0.954	3.053	18985.70
8.590	117585.64	0.805	0.803	0.996	0.841	0.954	3.053	18992.54
8.600	117729.37	0.805	0.803	0.996	0.841	0.954	3.052	18999.38
8.610	117873.08	0.806	0.803	0.996	0.841	0.954	3.051	19006.23
8.620	118016.91	0.806	0.803	0.996	0.841	0.954	3.050	19013.08
8.630	118160.63	0.806	0.803	0.996	0.841	0.954	3.050	19019.93
8.640	118304.42	0.806	0.803	0.996	0.841	0.954	3.049	19026.77
8.650	118448.22	0.806	0.803	0.996	0.841	0.955	3.048	19033.61
8.660	118591.95	0.806	0.803	0.996	0.841	0.955	3.047	19040.46
8.670	118735.80	0.806	0.803	0.996	0.841	0.955	3.047	19047.31

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
8.680	118879.57	0.806	0.803	0.996	0.841	0.955	3.046	19054.15
8.690	119023.38	0.806	0.803	0.996	0.841	0.955	3.045	19060.99
8.700	119167.17	0.806	0.803	0.996	0.841	0.955	3.044	19067.84
8.710	119310.95	0.806	0.803	0.996	0.841	0.955	3.044	19074.69
8.720	119454.86	0.806	0.803	0.996	0.841	0.955	3.043	19081.54
8.730	119598.63	0.806	0.803	0.996	0.841	0.955	3.042	19088.38
8.740	119742.52	0.806	0.803	0.996	0.841	0.955	3.041	19095.22
8.750	119886.37	0.806	0.803	0.996	0.841	0.955	3.041	19102.07
8.760	120030.19	0.806	0.803	0.996	0.841	0.955	3.040	19108.92
8.770	120174.06	0.806	0.803	0.996	0.841	0.956	3.039	19115.76
8.780	120317.90	0.806	0.803	0.996	0.841	0.956	3.039	19122.61
8.790	120461.79	0.806	0.803	0.996	0.841	0.956	3.038	19129.46
8.800	120605.64	0.806	0.803	0.996	0.841	0.956	3.037	19136.29
8.810	120749.59	0.806	0.804	0.996	0.841	0.956	3.036	19143.14
8.820	120893.45	0.806	0.804	0.997	0.841	0.956	3.036	19149.99
8.830	121037.34	0.806	0.804	0.997	0.841	0.956	3.035	19156.83
8.840	121181.27	0.806	0.804	0.997	0.841	0.956	3.034	19163.68
8.850	121325.20	0.807	0.804	0.997	0.841	0.956	3.033	19170.53
8.860	121469.13	0.807	0.804	0.997	0.841	0.956	3.033	19177.37
8.870	121613.02	0.807	0.804	0.997	0.841	0.956	3.032	19184.21
8.880	121756.96	0.807	0.804	0.997	0.840	0.956	3.031	19191.06
8.890	121900.94	0.807	0.804	0.997	0.840	0.956	3.031	19197.91
8.900	122044.81	0.807	0.804	0.997	0.840	0.957	3.030	19204.75
8.910	122188.84	0.807	0.804	0.997	0.840	0.957	3.029	19211.60
8.920	122332.77	0.807	0.804	0.997	0.840	0.957	3.028	19218.45
8.930	122476.75	0.807	0.804	0.997	0.840	0.957	3.028	19225.29
8.940	122620.73	0.807	0.804	0.997	0.840	0.957	3.027	19232.14
8.950	122764.69	0.807	0.804	0.997	0.840	0.957	3.026	19238.98
8.960	122908.77	0.807	0.804	0.997	0.840	0.957	3.026	19245.83
8.970	123052.67	0.807	0.804	0.997	0.840	0.957	3.025	19252.68
8.980	123196.69	0.807	0.804	0.997	0.840	0.957	3.024	19259.51
8.990	123340.72	0.807	0.804	0.997	0.840	0.957	3.024	19266.36
9.000	123484.76	0.807	0.804	0.997	0.840	0.957	3.023	19273.21
9.010	123628.82	0.807	0.804	0.997	0.840	0.957	3.022	19280.06
9.020	123772.84	0.807	0.804	0.997	0.840	0.958	3.022	19286.90
9.030	123916.86	0.807	0.805	0.997	0.840	0.958	3.021	19293.74
9.040	124060.91	0.807	0.805	0.997	0.840	0.958	3.020	19300.59
9.050	124204.92	0.807	0.805	0.997	0.840	0.958	3.020	19307.44
9.060	124349.05	0.807	0.805	0.997	0.840	0.958	3.019	19314.28
9.070	124493.05	0.807	0.805	0.997	0.840	0.958	3.018	19321.13
9.080	124637.19	0.807	0.805	0.997	0.840	0.958	3.017	19327.97
9.090	124781.23	0.808	0.805	0.997	0.840	0.958	3.017	19334.82
9.100	124925.29	0.808	0.805	0.997	0.840	0.958	3.016	19341.67
9.110	125069.44	0.808	0.805	0.997	0.840	0.958	3.015	19348.51
9.120	125213.45	0.808	0.805	0.997	0.840	0.958	3.015	19355.36
9.130	125357.65	0.808	0.805	0.997	0.840	0.958	3.014	19362.20
9.140	125501.70	0.808	0.805	0.997	0.840	0.959	3.013	19369.05
9.150	125645.84	0.808	0.805	0.997	0.840	0.959	3.013	19375.89
9.160	125789.98	0.808	0.805	0.997	0.840	0.959	3.012	19382.74
9.170	125934.10	0.808	0.805	0.997	0.840	0.959	3.011	19389.58
9.180	126078.30	0.808	0.805	0.997	0.840	0.959	3.011	19396.43
9.190	126222.35	0.808	0.805	0.997	0.840	0.959	3.010	19403.28
9.200	126366.56	0.808	0.805	0.997	0.840	0.959	3.009	19410.12

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
9.210	126510.74	0.808	0.805	0.997	0.840	0.959	3.009	19416.96
9.220	126654.80	0.808	0.805	0.997	0.840	0.959	3.008	19423.81
9.230	126799.06	0.808	0.805	0.997	0.840	0.959	3.008	19430.65
9.240	126943.20	0.808	0.805	0.997	0.840	0.959	3.007	19437.51
9.250	127087.42	0.808	0.805	0.997	0.840	0.959	3.006	19444.35
9.260	127231.58	0.808	0.806	0.997	0.840	0.960	3.006	19451.20
9.270	127375.80	0.808	0.806	0.997	0.839	0.960	3.005	19458.04
9.280	127519.99	0.808	0.806	0.997	0.839	0.960	3.004	19464.89
9.290	127664.16	0.808	0.806	0.997	0.839	0.960	3.004	19471.73
9.300	127808.43	0.808	0.806	0.997	0.839	0.960	3.003	19478.58
9.310	127952.63	0.808	0.806	0.997	0.839	0.960	3.002	19485.42
9.320	128096.91	0.808	0.806	0.997	0.839	0.960	3.002	19492.26
9.330	128241.11	0.809	0.806	0.997	0.839	0.960	3.001	19499.11
9.340	128385.32	0.809	0.806	0.997	0.839	0.960	3.000	19505.96
9.350	128529.65	0.809	0.806	0.997	0.839	0.960	3.000	19512.81
9.360	128673.84	0.809	0.806	0.997	0.839	0.960	2.999	19519.65
9.370	128818.13	0.809	0.806	0.997	0.839	0.960	2.999	19526.50
9.380	128962.41	0.809	0.806	0.997	0.839	0.960	2.998	19533.34
9.390	129106.66	0.809	0.806	0.997	0.839	0.961	2.997	19540.19
9.400	129251.05	0.809	0.806	0.997	0.839	0.961	2.997	19547.04
9.410	129395.23	0.809	0.806	0.997	0.839	0.961	2.996	19553.88
9.420	129539.61	0.809	0.806	0.997	0.839	0.961	2.995	19560.72
9.430	129683.88	0.809	0.806	0.997	0.839	0.961	2.995	19567.57
9.440	129828.13	0.809	0.806	0.997	0.839	0.961	2.994	19574.42
9.450	129972.58	0.809	0.806	0.997	0.839	0.961	2.994	19581.26
9.460	130116.79	0.809	0.806	0.997	0.839	0.961	2.993	19588.10
9.470	130261.16	0.809	0.806	0.997	0.839	0.961	2.992	19594.95
9.480	130405.45	0.809	0.806	0.997	0.839	0.961	2.992	19601.80
9.490	130549.80	0.809	0.807	0.997	0.839	0.961	2.991	19608.65
9.500	130694.19	0.809	0.807	0.997	0.839	0.961	2.991	19615.49
9.510	130838.52	0.809	0.807	0.997	0.839	0.962	2.990	19622.33
9.520	130982.91	0.809	0.807	0.997	0.839	0.962	2.989	19629.19
9.530	131127.27	0.809	0.807	0.997	0.839	0.962	2.989	19636.03
9.540	131271.59	0.809	0.807	0.997	0.839	0.962	2.988	19642.87
9.550	131416.02	0.809	0.807	0.997	0.839	0.962	2.988	19649.72
9.560	131560.33	0.809	0.807	0.997	0.839	0.962	2.987	19656.56
9.570	131704.81	0.809	0.807	0.997	0.839	0.962	2.986	19663.41
9.580	131849.17	0.809	0.807	0.997	0.839	0.962	2.986	19670.26
9.590	131993.59	0.810	0.807	0.997	0.839	0.962	2.985	19677.10
9.600	132138.02	0.810	0.807	0.997	0.839	0.962	2.985	19683.95
9.610	132282.36	0.810	0.807	0.997	0.839	0.962	2.984	19690.79
9.620	132426.88	0.810	0.807	0.997	0.839	0.962	2.983	19697.64
9.630	132571.31	0.810	0.807	0.997	0.839	0.962	2.983	19704.48
9.640	132715.72	0.810	0.807	0.997	0.839	0.963	2.982	19711.33
9.650	132860.19	0.810	0.807	0.997	0.839	0.963	2.982	19718.18
9.660	133004.61	0.810	0.807	0.997	0.838	0.963	2.981	19725.02
9.670	133149.09	0.810	0.807	0.997	0.838	0.963	2.980	19731.87
9.680	133293.58	0.810	0.807	0.997	0.838	0.963	2.980	19738.71
9.690	133438.06	0.810	0.807	0.997	0.838	0.963	2.979	19745.55
9.700	133582.52	0.810	0.807	0.997	0.838	0.963	2.979	19752.40
9.710	133727.03	0.810	0.807	0.997	0.838	0.963	2.978	19759.24
9.720	133871.50	0.810	0.807	0.997	0.838	0.963	2.978	19766.10
9.730	134015.97	0.810	0.807	0.997	0.838	0.963	2.977	19772.94

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
9.740	134160.53	0.810	0.808	0.997	0.838	0.963	2.976	19779.78
9.750	134305.00	0.810	0.808	0.997	0.838	0.963	2.976	19786.63
9.760	134449.55	0.810	0.808	0.997	0.838	0.963	2.975	19793.47
9.770	134594.06	0.810	0.808	0.997	0.838	0.964	2.975	19800.33
9.780	134738.55	0.810	0.808	0.997	0.838	0.964	2.974	19807.17
9.790	134883.16	0.810	0.808	0.997	0.838	0.964	2.974	19814.01
9.800	135027.67	0.810	0.808	0.997	0.838	0.964	2.973	19820.86
9.810	135172.30	0.810	0.808	0.997	0.838	0.964	2.972	19827.71
9.820	135316.77	0.810	0.808	0.997	0.838	0.964	2.972	19834.55
9.830	135461.34	0.810	0.808	0.997	0.838	0.964	2.971	19841.40
9.840	135606.00	0.810	0.808	0.997	0.838	0.964	2.971	19848.24
9.850	135750.47	0.811	0.808	0.997	0.838	0.964	2.970	19855.09
9.860	135895.08	0.811	0.808	0.997	0.838	0.964	2.970	19861.93
9.870	136039.64	0.811	0.808	0.997	0.838	0.964	2.969	19868.78
9.880	136184.31	0.811	0.808	0.997	0.838	0.964	2.969	19875.63
9.890	136328.89	0.811	0.808	0.997	0.838	0.965	2.968	19882.47
9.900	136473.44	0.811	0.808	0.997	0.838	0.965	2.967	19889.32
9.910	136618.11	0.811	0.808	0.997	0.838	0.965	2.967	19896.16
9.920	136762.72	0.811	0.808	0.997	0.838	0.965	2.966	19903.01
9.930	136907.38	0.811	0.808	0.997	0.838	0.965	2.966	19909.85
9.940	137052.00	0.811	0.808	0.997	0.838	0.965	2.965	19916.69
9.950	137196.66	0.811	0.808	0.997	0.838	0.965	2.965	19923.54
9.960	137341.36	0.811	0.808	0.997	0.838	0.965	2.964	19930.39
9.970	137485.94	0.811	0.808	0.997	0.838	0.965	2.964	19937.23
9.980	137630.61	0.811	0.809	0.997	0.838	0.965	2.963	19944.08
9.990	137775.30	0.811	0.809	0.997	0.838	0.965	2.962	19950.92
10.000	137919.97	0.811	0.809	0.997	0.838	0.965	2.962	19957.77
10.010	138064.72	0.811	0.809	0.997	0.838	0.965	2.961	19964.64
10.020	138209.34	0.811	0.809	0.997	0.838	0.965	2.961	19971.51
10.030	138354.03	0.811	0.809	0.997	0.838	0.965	2.960	19978.38
10.040	138498.75	0.811	0.809	0.997	0.838	0.966	2.960	19985.24
10.050	138643.47	0.811	0.809	0.997	0.838	0.966	2.959	19992.12
10.060	138788.19	0.811	0.809	0.997	0.838	0.966	2.959	19998.98
10.070	138932.88	0.811	0.809	0.997	0.838	0.966	2.958	20005.85
10.080	139077.64	0.811	0.809	0.997	0.838	0.966	2.958	20012.72
10.090	139222.33	0.811	0.809	0.997	0.838	0.966	2.957	20019.58
10.100	139367.08	0.811	0.809	0.997	0.838	0.966	2.957	20026.46
10.110	139511.83	0.811	0.809	0.997	0.838	0.966	2.956	20033.32
10.120	139656.53	0.812	0.809	0.997	0.838	0.966	2.956	20040.19
10.130	139801.41	0.812	0.809	0.997	0.838	0.966	2.955	20047.06
10.140	139946.09	0.812	0.809	0.997	0.838	0.966	2.955	20053.93
10.150	140090.83	0.812	0.809	0.997	0.838	0.966	2.954	20060.80
10.160	140235.63	0.812	0.809	0.997	0.838	0.966	2.954	20067.66
10.170	140380.38	0.812	0.809	0.997	0.838	0.966	2.953	20074.53
10.180	140525.25	0.812	0.809	0.997	0.838	0.966	2.953	20081.40
10.190	140669.91	0.812	0.809	0.997	0.838	0.966	2.952	20088.27
10.200	140814.80	0.812	0.809	0.997	0.838	0.966	2.952	20095.14
10.210	140959.61	0.812	0.809	0.997	0.838	0.966	2.951	20102.01
10.220	141104.42	0.812	0.809	0.997	0.838	0.966	2.951	20108.88
10.230	141249.19	0.812	0.809	0.997	0.838	0.966	2.950	20115.74
10.240	141393.98	0.812	0.810	0.997	0.838	0.966	2.950	20122.61
10.250	141538.89	0.812	0.810	0.997	0.838	0.966	2.949	20129.48
10.260	141683.63	0.812	0.810	0.997	0.838	0.966	2.949	20136.35

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
10.270	141828.50	0.812	0.810	0.997	0.838	0.967	2.948	20143.21
10.280	141973.39	0.812	0.810	0.997	0.838	0.967	2.948	20150.09
10.290	142118.17	0.812	0.810	0.997	0.838	0.967	2.947	20156.95
10.300	142263.09	0.812	0.810	0.997	0.838	0.967	2.947	20163.82
10.310	142407.91	0.812	0.810	0.997	0.838	0.967	2.946	20170.69
10.320	142552.80	0.812	0.810	0.997	0.838	0.967	2.946	20177.55
10.330	142697.69	0.812	0.810	0.997	0.838	0.967	2.945	20184.43
10.340	142842.53	0.812	0.810	0.997	0.838	0.967	2.945	20191.30
10.350	142987.55	0.812	0.810	0.997	0.838	0.967	2.944	20198.17
10.360	143132.34	0.812	0.810	0.997	0.838	0.967	2.944	20205.04
10.370	143277.25	0.812	0.810	0.997	0.838	0.967	2.943	20211.90
10.380	143422.16	0.812	0.810	0.997	0.838	0.967	2.943	20218.77
10.390	143567.06	0.813	0.810	0.997	0.838	0.967	2.942	20225.64
10.400	143711.98	0.813	0.810	0.997	0.838	0.967	2.942	20232.51
10.410	143856.88	0.813	0.810	0.997	0.838	0.967	2.941	20239.38
10.420	144001.84	0.813	0.810	0.997	0.838	0.967	2.941	20246.24
10.430	144146.69	0.813	0.810	0.997	0.838	0.967	2.940	20253.12
10.440	144291.69	0.813	0.810	0.997	0.838	0.967	2.940	20259.98
10.450	144436.63	0.813	0.810	0.997	0.838	0.967	2.939	20266.85
10.460	144581.52	0.813	0.810	0.997	0.838	0.967	2.939	20273.72
10.470	144726.55	0.813	0.810	0.997	0.838	0.967	2.938	20280.58
10.480	144871.52	0.813	0.810	0.997	0.838	0.967	2.938	20287.46
10.490	145016.48	0.813	0.810	0.997	0.838	0.967	2.937	20294.32
10.500	145161.45	0.813	0.811	0.997	0.838	0.968	2.937	20301.19
10.510	145306.42	0.813	0.811	0.997	0.838	0.968	2.936	20308.06
10.520	145451.47	0.813	0.811	0.997	0.838	0.968	2.936	20314.93
10.530	145596.39	0.813	0.811	0.997	0.838	0.968	2.935	20321.80
10.540	145741.44	0.813	0.811	0.997	0.838	0.968	2.935	20328.66
10.550	145886.41	0.813	0.811	0.997	0.838	0.968	2.934	20335.53
10.560	146031.41	0.813	0.811	0.997	0.838	0.968	2.934	20342.40
10.570	146176.47	0.813	0.811	0.997	0.838	0.968	2.934	20349.27
10.580	146321.44	0.813	0.811	0.997	0.838	0.968	2.933	20356.14
10.590	146466.52	0.813	0.811	0.997	0.838	0.968	2.933	20363.01
10.600	146611.55	0.813	0.811	0.997	0.838	0.968	2.932	20369.87
10.610	146756.59	0.813	0.811	0.997	0.838	0.968	2.932	20376.74
10.620	146901.63	0.813	0.811	0.997	0.838	0.968	2.931	20383.61
10.630	147046.63	0.813	0.811	0.997	0.838	0.968	2.931	20390.48
10.640	147191.78	0.813	0.811	0.997	0.838	0.968	2.930	20397.35
10.650	147336.78	0.813	0.811	0.997	0.838	0.968	2.930	20404.22
10.660	147481.91	0.813	0.811	0.997	0.838	0.968	2.929	20411.08
10.670	147626.97	0.813	0.811	0.997	0.838	0.968	2.929	20417.95
10.680	147771.95	0.814	0.811	0.997	0.838	0.968	2.928	20424.82
10.690	147917.13	0.814	0.811	0.997	0.838	0.968	2.928	20431.69
10.700	148062.20	0.814	0.811	0.997	0.838	0.968	2.928	20438.56
10.710	148207.31	0.814	0.811	0.997	0.838	0.968	2.927	20445.43
10.720	148352.42	0.814	0.811	0.997	0.838	0.968	2.927	20452.29
10.730	148497.50	0.814	0.811	0.997	0.838	0.968	2.926	20459.17
10.740	148642.67	0.814	0.811	0.997	0.838	0.969	2.926	20466.03
10.750	148787.75	0.814	0.811	0.997	0.838	0.969	2.925	20472.90
10.760	148932.94	0.814	0.811	0.997	0.838	0.969	2.925	20479.77
10.770	149078.05	0.814	0.812	0.997	0.838	0.969	2.924	20486.64
10.780	149223.20	0.814	0.812	0.997	0.838	0.969	2.924	20493.51
10.790	149368.38	0.814	0.812	0.997	0.838	0.969	2.924	20500.38

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
10.800	149513.47	0.814	0.812	0.997	0.838	0.969	2.923	20507.24
10.810	149658.67	0.814	0.812	0.997	0.838	0.969	2.923	20514.12
10.820	149803.80	0.814	0.812	0.997	0.838	0.969	2.922	20520.98
10.830	149948.95	0.814	0.812	0.997	0.838	0.969	2.922	20527.85
10.840	150094.19	0.814	0.812	0.997	0.838	0.969	2.921	20534.72
10.850	150239.28	0.814	0.812	0.997	0.838	0.969	2.921	20541.59
10.860	150384.53	0.814	0.812	0.997	0.838	0.969	2.921	20548.46
10.870	150529.72	0.814	0.812	0.997	0.838	0.969	2.920	20555.32
10.880	150674.88	0.814	0.812	0.997	0.838	0.969	2.920	20562.19
10.890	150820.13	0.814	0.812	0.997	0.838	0.969	2.919	20569.06
10.900	150965.34	0.814	0.812	0.997	0.838	0.969	2.919	20575.93
10.910	151110.59	0.814	0.812	0.997	0.838	0.969	2.918	20582.80
10.920	151255.77	0.814	0.812	0.997	0.838	0.969	2.918	20589.66
10.930	151401.08	0.814	0.812	0.997	0.838	0.969	2.917	20596.53
10.940	151546.23	0.814	0.812	0.997	0.838	0.969	2.917	20603.40
10.950	151691.50	0.814	0.812	0.997	0.838	0.969	2.917	20610.27
10.960	151836.73	0.814	0.812	0.997	0.838	0.969	2.916	20617.14
10.970	151982.00	0.815	0.812	0.997	0.838	0.969	2.916	20624.01
10.980	152127.27	0.815	0.812	0.997	0.838	0.969	2.915	20630.88
10.990	152272.48	0.815	0.812	0.997	0.838	0.970	2.915	20637.75
11.000	152417.80	0.815	0.812	0.997	0.838	0.970	2.915	20644.61
11.010	152563.17	0.815	0.812	0.997	0.838	0.970	2.914	20651.51
11.020	152708.34	0.815	0.812	0.997	0.838	0.970	2.914	20658.41
11.030	152853.69	0.815	0.812	0.997	0.838	0.970	2.913	20665.30
11.040	152998.94	0.815	0.812	0.997	0.838	0.970	2.913	20672.20
11.050	153144.30	0.815	0.813	0.997	0.838	0.970	2.912	20679.10
11.060	153289.56	0.815	0.813	0.997	0.838	0.970	2.912	20686.00
11.070	153434.84	0.815	0.813	0.997	0.838	0.970	2.912	20692.89
11.080	153580.22	0.815	0.813	0.997	0.838	0.970	2.911	20699.79
11.090	153725.55	0.815	0.813	0.997	0.838	0.970	2.911	20706.69
11.100	153870.92	0.815	0.813	0.997	0.838	0.970	2.910	20713.59
11.110	154016.23	0.815	0.813	0.997	0.838	0.970	2.910	20720.49
11.120	154161.59	0.815	0.813	0.997	0.838	0.970	2.910	20727.39
11.130	154306.95	0.815	0.813	0.997	0.838	0.970	2.909	20734.29
11.140	154452.28	0.815	0.813	0.997	0.838	0.970	2.909	20741.19
11.150	154597.64	0.815	0.813	0.997	0.838	0.970	2.908	20748.09
11.160	154743.00	0.815	0.813	0.997	0.838	0.970	2.908	20754.99
11.170	154888.41	0.815	0.813	0.997	0.838	0.970	2.908	20761.88
11.180	155033.86	0.815	0.813	0.997	0.838	0.970	2.907	20768.78
11.190	155179.13	0.815	0.813	0.997	0.838	0.970	2.907	20775.69
11.200	155324.59	0.815	0.813	0.997	0.838	0.970	2.906	20782.58
11.210	155469.98	0.815	0.813	0.997	0.838	0.970	2.906	20789.48
11.220	155615.38	0.815	0.813	0.997	0.838	0.970	2.906	20796.38
11.230	155760.83	0.815	0.813	0.997	0.838	0.970	2.905	20803.28
11.240	155906.17	0.815	0.813	0.997	0.838	0.970	2.905	20810.18
11.250	156051.69	0.815	0.813	0.997	0.838	0.970	2.904	20817.08
11.260	156197.11	0.816	0.813	0.997	0.838	0.971	2.904	20823.98
11.270	156342.58	0.816	0.813	0.997	0.838	0.971	2.904	20830.88
11.280	156488.00	0.816	0.813	0.997	0.838	0.971	2.903	20837.77
11.290	156633.39	0.816	0.813	0.997	0.838	0.971	2.903	20844.67
11.300	156778.94	0.816	0.813	0.997	0.838	0.971	2.903	20851.57
11.310	156924.39	0.816	0.813	0.997	0.838	0.971	2.902	20858.47
11.320	157069.88	0.816	0.813	0.997	0.838	0.971	2.902	20865.37

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
11.330	157215.36	0.816	0.814	0.997	0.838	0.971	2.901	20872.26
11.340	157360.80	0.816	0.814	0.997	0.838	0.971	2.901	20879.17
11.350	157506.31	0.816	0.814	0.997	0.838	0.971	2.901	20886.07
11.360	157651.78	0.816	0.814	0.997	0.838	0.971	2.900	20892.97
11.370	157797.34	0.816	0.814	0.997	0.838	0.971	2.900	20899.87
11.380	157942.81	0.816	0.814	0.997	0.838	0.971	2.899	20906.76
11.390	158088.36	0.816	0.814	0.997	0.838	0.971	2.899	20913.67
11.400	158233.91	0.816	0.814	0.997	0.838	0.971	2.899	20920.56
11.410	158379.42	0.816	0.814	0.997	0.838	0.971	2.898	20927.46
11.420	158525.00	0.816	0.814	0.997	0.838	0.971	2.898	20934.36
11.430	158670.47	0.816	0.814	0.997	0.838	0.971	2.898	20941.26
11.440	158816.06	0.816	0.814	0.997	0.838	0.971	2.897	20948.16
11.450	158961.63	0.816	0.814	0.997	0.838	0.971	2.897	20955.06
11.460	159107.16	0.816	0.814	0.997	0.838	0.971	2.896	20961.96
11.470	159252.75	0.816	0.814	0.997	0.838	0.971	2.896	20968.86
11.480	159398.28	0.816	0.814	0.997	0.838	0.971	2.896	20975.75
11.490	159543.95	0.816	0.814	0.997	0.838	0.971	2.895	20982.66
11.500	159689.52	0.816	0.814	0.997	0.838	0.971	2.895	20989.56
11.510	159835.08	0.816	0.814	0.997	0.838	0.971	2.895	20996.45
11.520	159980.69	0.816	0.814	0.997	0.838	0.971	2.894	21003.35
11.530	160126.25	0.816	0.814	0.997	0.838	0.971	2.894	21010.25
11.540	160271.94	0.816	0.814	0.997	0.838	0.972	2.894	21017.15
11.550	160417.50	0.816	0.814	0.997	0.838	0.972	2.893	21024.05
11.560	160563.17	0.816	0.814	0.997	0.838	0.972	2.893	21030.95
11.570	160708.80	0.817	0.814	0.997	0.838	0.972	2.892	21037.85
11.580	160854.39	0.817	0.814	0.997	0.838	0.972	2.892	21044.74
11.590	161000.11	0.817	0.814	0.997	0.838	0.972	2.892	21051.65
11.600	161145.73	0.817	0.814	0.997	0.838	0.972	2.891	21058.55
11.610	161291.42	0.817	0.814	0.997	0.838	0.972	2.891	21065.45
11.620	161437.08	0.817	0.815	0.997	0.838	0.972	2.891	21072.35
11.630	161582.66	0.817	0.815	0.997	0.838	0.972	2.890	21079.24
11.640	161728.45	0.817	0.815	0.997	0.838	0.972	2.890	21086.14
11.650	161874.14	0.817	0.815	0.997	0.838	0.972	2.890	21093.04
11.660	162019.78	0.817	0.815	0.997	0.838	0.972	2.889	21099.94
11.670	162165.52	0.817	0.815	0.997	0.838	0.972	2.889	21106.84
11.680	162311.16	0.817	0.815	0.997	0.838	0.972	2.888	21113.74
11.690	162456.95	0.817	0.815	0.997	0.838	0.972	2.888	21120.64
11.700	162602.64	0.817	0.815	0.997	0.838	0.972	2.888	21127.53
11.710	162748.39	0.817	0.815	0.997	0.838	0.972	2.887	21134.43
11.720	162894.11	0.817	0.815	0.997	0.838	0.972	2.887	21141.34
11.730	163039.86	0.817	0.815	0.997	0.838	0.972	2.887	21148.23
11.740	163185.59	0.817	0.815	0.997	0.838	0.972	2.886	21155.14
11.750	163331.30	0.817	0.815	0.997	0.838	0.972	2.886	21162.03
11.760	163477.14	0.817	0.815	0.997	0.838	0.972	2.886	21168.93
11.770	163622.84	0.817	0.815	0.997	0.838	0.972	2.885	21175.84
11.780	163768.63	0.817	0.815	0.997	0.838	0.972	2.885	21182.73
11.790	163914.44	0.817	0.815	0.997	0.838	0.972	2.885	21189.63
11.800	164060.23	0.817	0.815	0.997	0.838	0.972	2.884	21196.53
11.810	164206.06	0.817	0.815	0.997	0.838	0.972	2.884	21203.43
11.820	164351.81	0.817	0.815	0.997	0.838	0.972	2.884	21210.33
11.830	164497.63	0.817	0.815	0.997	0.838	0.972	2.883	21217.22
11.840	164643.48	0.817	0.815	0.997	0.838	0.973	2.883	21224.12
11.850	164789.25	0.817	0.815	0.997	0.838	0.973	2.883	21231.03

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
11.860	164935.08	0.817	0.815	0.997	0.838	0.973	2.882	21237.92
11.870	165080.91	0.817	0.815	0.997	0.838	0.973	2.882	21244.83
11.880	165226.77	0.818	0.815	0.997	0.838	0.973	2.882	21251.72
11.890	165372.61	0.818	0.815	0.997	0.838	0.973	2.881	21258.62
11.900	165518.45	0.818	0.815	0.997	0.838	0.973	2.881	21265.52
11.910	165664.28	0.818	0.815	0.997	0.838	0.973	2.881	21272.41
11.920	165810.14	0.818	0.816	0.997	0.838	0.973	2.880	21279.32
11.930	165956.06	0.818	0.816	0.997	0.838	0.973	2.880	21286.22
11.940	166101.94	0.818	0.816	0.997	0.838	0.973	2.880	21293.11
11.950	166247.81	0.818	0.816	0.997	0.838	0.973	2.879	21300.02
11.960	166393.70	0.818	0.816	0.997	0.838	0.973	2.879	21306.91
11.970	166539.55	0.818	0.816	0.997	0.838	0.973	2.879	21313.81
11.980	166685.53	0.818	0.816	0.997	0.838	0.973	2.878	21320.71
11.990	166831.44	0.818	0.816	0.997	0.838	0.973	2.878	21327.61
12.000	166977.41	0.818	0.816	0.997	0.838	0.973	2.878	21334.51
12.010	167123.33	0.818	0.816	0.997	0.838	0.973	2.877	21341.48
12.020	167269.16	0.818	0.816	0.997	0.838	0.973	2.877	21348.45
12.030	167415.14	0.818	0.816	0.997	0.838	0.973	2.877	21355.42
12.040	167561.06	0.818	0.816	0.997	0.838	0.973	2.876	21362.38
12.050	167707.09	0.818	0.816	0.997	0.838	0.973	2.876	21369.35
12.060	167853.00	0.818	0.816	0.997	0.838	0.973	2.876	21376.32
12.070	167998.91	0.818	0.816	0.997	0.839	0.973	2.875	21383.29
12.080	168144.88	0.818	0.816	0.997	0.839	0.973	2.875	21390.26
12.090	168290.86	0.818	0.816	0.997	0.839	0.973	2.875	21397.22
12.100	168436.97	0.818	0.816	0.997	0.839	0.973	2.874	21404.20
12.110	168582.83	0.818	0.816	0.997	0.839	0.973	2.874	21411.16
12.120	168728.89	0.818	0.816	0.997	0.839	0.973	2.874	21418.13
12.130	168874.94	0.818	0.816	0.997	0.839	0.973	2.874	21425.10
12.140	169020.89	0.818	0.816	0.997	0.839	0.973	2.873	21432.06
12.150	169166.98	0.818	0.816	0.997	0.839	0.973	2.873	21439.04
12.160	169312.97	0.818	0.816	0.997	0.839	0.973	2.873	21446.00
12.170	169458.98	0.818	0.816	0.997	0.839	0.973	2.872	21452.97
12.180	169605.08	0.818	0.816	0.997	0.839	0.973	2.872	21459.94
12.190	169751.03	0.818	0.816	0.997	0.839	0.973	2.872	21466.91
12.200	169897.14	0.819	0.816	0.997	0.839	0.973	2.871	21473.88
12.210	170043.22	0.819	0.816	0.997	0.839	0.973	2.871	21480.84
12.220	170189.28	0.819	0.817	0.997	0.839	0.973	2.871	21487.81
12.230	170335.31	0.819	0.817	0.997	0.839	0.974	2.871	21494.79
12.240	170481.38	0.819	0.817	0.997	0.839	0.974	2.870	21501.74
12.250	170627.47	0.819	0.817	0.997	0.839	0.974	2.870	21508.72
12.260	170773.53	0.819	0.817	0.997	0.839	0.974	2.870	21515.68
12.270	170919.75	0.819	0.817	0.997	0.839	0.974	2.869	21522.65
12.280	171065.77	0.819	0.817	0.997	0.839	0.974	2.869	21529.62
12.290	171211.89	0.819	0.817	0.997	0.839	0.974	2.869	21536.59
12.300	171358.03	0.819	0.817	0.997	0.839	0.974	2.868	21543.56
12.310	171504.20	0.819	0.817	0.997	0.839	0.974	2.868	21550.52
12.320	171650.28	0.819	0.817	0.997	0.839	0.974	2.868	21557.49
12.330	171796.42	0.819	0.817	0.997	0.839	0.974	2.868	21564.46
12.340	171942.69	0.819	0.817	0.997	0.839	0.974	2.867	21571.43
12.350	172088.77	0.819	0.817	0.998	0.839	0.974	2.867	21578.40
12.360	172234.94	0.819	0.817	0.998	0.839	0.974	2.867	21585.37
12.370	172381.11	0.819	0.817	0.998	0.839	0.974	2.866	21592.33
12.380	172527.23	0.819	0.817	0.998	0.839	0.974	2.866	21599.30

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
12.390	172673.47	0.819	0.817	0.998	0.839	0.974	2.866	21606.27
12.400	172819.63	0.819	0.817	0.998	0.839	0.974	2.866	21613.25
12.410	172965.80	0.819	0.817	0.998	0.839	0.974	2.865	21620.21
12.420	173112.03	0.819	0.817	0.998	0.839	0.974	2.865	21627.18
12.430	173258.22	0.819	0.817	0.998	0.839	0.974	2.865	21634.15
12.440	173404.53	0.819	0.817	0.998	0.839	0.974	2.864	21641.11
12.450	173550.72	0.819	0.817	0.998	0.839	0.974	2.864	21648.09
12.460	173696.89	0.819	0.817	0.998	0.839	0.974	2.864	21655.05
12.470	173843.17	0.819	0.817	0.998	0.839	0.974	2.864	21662.02
12.480	173989.41	0.819	0.817	0.998	0.839	0.974	2.863	21668.99
12.490	174135.72	0.819	0.817	0.998	0.839	0.974	2.863	21675.96
12.500	174281.91	0.819	0.817	0.998	0.839	0.974	2.863	21682.92
12.510	174428.20	0.819	0.817	0.998	0.839	0.974	2.862	21689.89
12.520	174574.48	0.819	0.817	0.998	0.839	0.974	2.862	21696.86
12.530	174720.70	0.820	0.818	0.998	0.839	0.974	2.862	21703.83
12.540	174867.02	0.820	0.818	0.998	0.839	0.974	2.862	21710.80
12.550	175013.33	0.820	0.818	0.998	0.839	0.974	2.861	21717.77
12.560	175159.64	0.820	0.818	0.998	0.839	0.974	2.861	21724.74
12.570	175305.89	0.820	0.818	0.998	0.839	0.974	2.861	21731.70
12.580	175452.19	0.820	0.818	0.998	0.839	0.974	2.860	21738.68
12.590	175598.56	0.820	0.818	0.998	0.839	0.974	2.860	21745.64
12.600	175744.89	0.820	0.818	0.998	0.839	0.974	2.860	21752.61
12.610	175891.22	0.820	0.818	0.998	0.839	0.974	2.860	21759.58
12.620	176037.53	0.820	0.818	0.998	0.839	0.974	2.859	21766.54
12.630	176183.92	0.820	0.818	0.998	0.839	0.974	2.859	21773.52
12.640	176330.30	0.820	0.818	0.998	0.839	0.974	2.859	21780.48
12.650	176476.59	0.820	0.818	0.998	0.839	0.974	2.859	21787.45
12.660	176622.98	0.820	0.818	0.998	0.839	0.974	2.858	21794.42
12.670	176769.39	0.820	0.818	0.998	0.839	0.974	2.858	21801.38
12.680	176915.84	0.820	0.818	0.998	0.839	0.974	2.858	21808.36
12.690	177062.17	0.820	0.818	0.998	0.840	0.974	2.857	21815.32
12.700	177208.53	0.820	0.818	0.998	0.840	0.974	2.857	21822.29
12.710	177354.97	0.820	0.818	0.998	0.840	0.974	2.857	21829.26
12.720	177501.39	0.820	0.818	0.998	0.840	0.974	2.857	21836.23
12.730	177647.83	0.820	0.818	0.998	0.840	0.974	2.856	21843.20
12.740	177794.30	0.820	0.818	0.998	0.840	0.974	2.856	21850.16
12.750	177940.63	0.820	0.818	0.998	0.840	0.975	2.856	21857.13
12.760	178087.13	0.820	0.818	0.998	0.840	0.975	2.856	21864.10
12.770	178233.61	0.820	0.818	0.998	0.840	0.975	2.855	21871.07
12.780	178380.08	0.820	0.818	0.998	0.840	0.975	2.855	21878.04
12.790	178526.50	0.820	0.818	0.998	0.840	0.975	2.855	21885.01
12.800	178672.94	0.820	0.818	0.998	0.840	0.975	2.855	21891.97
12.810	178819.45	0.820	0.818	0.998	0.840	0.975	2.854	21898.94
12.820	178965.97	0.820	0.818	0.998	0.840	0.975	2.854	21905.91
12.830	179112.48	0.820	0.818	0.998	0.840	0.975	2.854	21912.88
12.840	179258.88	0.820	0.818	0.998	0.840	0.975	2.853	21919.85
12.850	179405.42	0.820	0.819	0.998	0.840	0.975	2.853	21926.82
12.860	179551.97	0.821	0.819	0.998	0.840	0.975	2.853	21933.79
12.870	179698.45	0.821	0.819	0.998	0.840	0.975	2.853	21940.75
12.880	179845.06	0.821	0.819	0.998	0.840	0.975	2.852	21947.72
12.890	179991.53	0.821	0.819	0.998	0.840	0.975	2.852	21954.69
12.900	180138.03	0.821	0.819	0.998	0.840	0.975	2.852	21961.66
12.910	180284.69	0.821	0.819	0.998	0.840	0.975	2.852	21968.63

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
12.920	180431.13	0.821	0.819	0.998	0.840	0.975	2.851	21975.59
12.930	180577.81	0.821	0.819	0.998	0.840	0.975	2.851	21982.57
12.940	180724.34	0.821	0.819	0.998	0.840	0.975	2.851	21989.53
12.950	180870.89	0.821	0.819	0.998	0.840	0.975	2.851	21996.50
12.960	181017.48	0.821	0.819	0.998	0.840	0.975	2.850	22003.47
12.970	181164.08	0.821	0.819	0.998	0.840	0.975	2.850	22010.44
12.980	181310.70	0.821	0.819	0.998	0.840	0.975	2.850	22017.41
12.990	181457.30	0.821	0.819	0.998	0.840	0.975	2.850	22024.37
13.000	181603.95	0.821	0.819	0.998	0.840	0.975	2.849	22031.34
13.010	181750.56	0.821	0.819	0.998	0.840	0.975	2.849	22038.36
13.020	181897.17	0.821	0.819	0.998	0.840	0.975	2.849	22045.36
13.030	182043.86	0.821	0.819	0.998	0.840	0.975	2.849	22052.38
13.040	182190.42	0.821	0.819	0.998	0.840	0.975	2.848	22059.41
13.050	182337.13	0.821	0.819	0.998	0.840	0.975	2.848	22066.45
13.060	182483.75	0.821	0.819	0.998	0.840	0.975	2.848	22073.49
13.070	182630.41	0.821	0.819	0.998	0.840	0.975	2.848	22080.53
13.080	182777.13	0.821	0.819	0.998	0.840	0.975	2.848	22087.57
13.090	182923.70	0.821	0.819	0.998	0.840	0.975	2.847	22094.62
13.100	183070.44	0.821	0.819	0.998	0.840	0.975	2.847	22101.65
13.110	183217.16	0.821	0.819	0.998	0.840	0.975	2.847	22108.71
13.120	183363.91	0.821	0.819	0.998	0.840	0.975	2.847	22115.75
13.130	183510.67	0.821	0.819	0.998	0.840	0.975	2.846	22122.80
13.140	183657.30	0.821	0.819	0.998	0.840	0.975	2.846	22129.85
13.150	183803.95	0.821	0.819	0.998	0.840	0.975	2.846	22136.90
13.160	183950.80	0.821	0.819	0.998	0.840	0.975	2.846	22143.95
13.170	184097.61	0.821	0.820	0.998	0.840	0.975	2.845	22151.00
13.180	184244.30	0.821	0.820	0.998	0.840	0.975	2.845	22158.05
13.190	184391.08	0.822	0.820	0.998	0.840	0.975	2.845	22165.10
13.200	184537.80	0.822	0.820	0.998	0.840	0.975	2.845	22172.14
13.210	184684.59	0.822	0.820	0.998	0.841	0.975	2.845	22179.20
13.220	184831.47	0.822	0.820	0.998	0.841	0.975	2.844	22186.24
13.230	184978.19	0.822	0.820	0.998	0.841	0.975	2.844	22193.29
13.240	185125.02	0.822	0.820	0.998	0.841	0.975	2.844	22200.34
13.250	185271.84	0.822	0.820	0.998	0.841	0.975	2.844	22207.39
13.260	185418.67	0.822	0.820	0.998	0.841	0.975	2.843	22214.44
13.270	185565.55	0.822	0.820	0.998	0.841	0.975	2.843	22221.49
13.280	185712.31	0.822	0.820	0.998	0.841	0.975	2.843	22228.54
13.290	185859.16	0.822	0.820	0.998	0.841	0.975	2.843	22235.59
13.300	186006.06	0.822	0.820	0.998	0.841	0.975	2.843	22242.63
13.310	186152.98	0.822	0.820	0.998	0.841	0.975	2.842	22249.68
13.320	186299.84	0.822	0.820	0.998	0.841	0.975	2.842	22256.73
13.330	186446.69	0.822	0.820	0.998	0.841	0.975	2.842	22263.78
13.340	186593.55	0.822	0.820	0.998	0.841	0.975	2.842	22270.83
13.350	186740.52	0.822	0.820	0.998	0.841	0.975	2.841	22277.87
13.360	186887.36	0.822	0.820	0.998	0.841	0.975	2.841	22284.93
13.370	187034.30	0.822	0.820	0.998	0.841	0.975	2.841	22291.97
13.380	187181.20	0.822	0.820	0.998	0.841	0.975	2.841	22299.02
13.390	187328.17	0.822	0.820	0.998	0.841	0.975	2.841	22306.08
13.400	187475.11	0.822	0.820	0.998	0.841	0.975	2.840	22313.12
13.410	187622.09	0.822	0.820	0.998	0.841	0.975	2.840	22320.17
13.420	187768.97	0.822	0.820	0.998	0.841	0.975	2.840	22327.22
13.430	187915.95	0.822	0.820	0.998	0.841	0.975	2.840	22334.27
13.440	188062.97	0.822	0.820	0.998	0.841	0.975	2.839	22341.32

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
13.450	188209.95	0.822	0.820	0.998	0.841	0.975	2.839	22348.36
13.460	188356.97	0.822	0.820	0.998	0.841	0.975	2.839	22355.42
13.470	188503.92	0.822	0.820	0.998	0.841	0.975	2.839	22362.47
13.480	188650.91	0.822	0.820	0.998	0.841	0.975	2.839	22369.51
13.490	188798.00	0.822	0.821	0.998	0.841	0.975	2.838	22376.57
13.500	188945.05	0.822	0.821	0.998	0.841	0.975	2.838	22383.61
13.510	189092.14	0.822	0.821	0.998	0.841	0.975	2.838	22390.66
13.520	189239.11	0.822	0.821	0.998	0.841	0.975	2.838	22397.71
13.530	189386.11	0.823	0.821	0.998	0.841	0.975	2.838	22404.75
13.540	189533.19	0.823	0.821	0.998	0.841	0.975	2.837	22411.81
13.550	189680.25	0.823	0.821	0.998	0.841	0.975	2.837	22418.85
13.560	189827.41	0.823	0.821	0.998	0.841	0.975	2.837	22425.90
13.570	189974.47	0.823	0.821	0.998	0.841	0.975	2.837	22432.95
13.580	190121.53	0.823	0.821	0.998	0.841	0.975	2.837	22440.00
13.590	190268.67	0.823	0.821	0.998	0.841	0.975	2.836	22447.05
13.600	190415.72	0.823	0.821	0.998	0.841	0.975	2.836	22454.10
13.610	190562.91	0.823	0.821	0.998	0.842	0.975	2.836	22461.15
13.620	190710.02	0.823	0.821	0.998	0.842	0.975	2.836	22468.20
13.630	190857.13	0.823	0.821	0.998	0.842	0.975	2.836	22475.24
13.640	191004.28	0.823	0.821	0.998	0.842	0.975	2.835	22482.30
13.650	191151.42	0.823	0.821	0.998	0.842	0.975	2.835	22489.34
13.660	191298.67	0.823	0.821	0.998	0.842	0.975	2.835	22496.39
13.670	191445.81	0.823	0.821	0.998	0.842	0.976	2.835	22503.44
13.680	191592.95	0.823	0.821	0.998	0.842	0.976	2.834	22510.49
13.690	191740.20	0.823	0.821	0.998	0.842	0.976	2.834	22517.54
13.700	191887.42	0.823	0.821	0.998	0.842	0.976	2.834	22524.59
13.710	192034.63	0.823	0.821	0.998	0.842	0.976	2.834	22531.63
13.720	192181.77	0.823	0.821	0.998	0.842	0.976	2.834	22538.69
13.730	192329.02	0.823	0.821	0.998	0.842	0.976	2.833	22545.73
13.740	192476.23	0.823	0.821	0.998	0.842	0.976	2.833	22552.78
13.750	192623.58	0.823	0.821	0.998	0.842	0.976	2.833	22559.83
13.760	192770.86	0.823	0.821	0.998	0.842	0.976	2.833	22566.88
13.770	192917.97	0.823	0.821	0.998	0.842	0.976	2.833	22573.93
13.780	193065.28	0.823	0.821	0.998	0.842	0.976	2.833	22580.98
13.790	193212.56	0.823	0.821	0.998	0.842	0.976	2.832	22588.03
13.800	193359.86	0.823	0.821	0.998	0.842	0.976	2.832	22595.08
13.810	193507.25	0.823	0.821	0.998	0.842	0.976	2.832	22602.12
13.820	193654.44	0.823	0.822	0.998	0.842	0.976	2.832	22609.18
13.830	193801.80	0.823	0.822	0.998	0.842	0.976	2.832	22616.22
13.840	193949.09	0.823	0.822	0.998	0.842	0.976	2.831	22623.27
13.850	194096.45	0.823	0.822	0.998	0.842	0.976	2.831	22630.32
13.860	194243.81	0.823	0.822	0.998	0.842	0.976	2.831	22637.36
13.870	194391.11	0.824	0.822	0.998	0.842	0.976	2.831	22644.42
13.880	194538.45	0.824	0.822	0.998	0.842	0.976	2.831	22651.47
13.890	194685.94	0.824	0.822	0.998	0.842	0.976	2.830	22658.52
13.900	194833.33	0.824	0.822	0.998	0.842	0.976	2.830	22665.57
13.910	194980.69	0.824	0.822	0.998	0.842	0.976	2.830	22672.61
13.920	195128.09	0.824	0.822	0.998	0.842	0.976	2.830	22679.67
13.930	195275.50	0.824	0.822	0.998	0.842	0.976	2.830	22686.71
13.940	195422.86	0.824	0.822	0.998	0.842	0.976	2.829	22693.76
13.950	195570.39	0.824	0.822	0.998	0.842	0.976	2.829	22700.81
13.960	195717.73	0.824	0.822	0.998	0.843	0.976	2.829	22707.85
13.970	195865.19	0.824	0.822	0.998	0.843	0.976	2.829	22714.91

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
13.980	196012.70	0.824	0.822	0.998	0.843	0.976	2.829	22721.95
13.990	196160.13	0.824	0.822	0.998	0.843	0.976	2.828	22729.01
14.000	196307.63	0.824	0.822	0.998	0.843	0.976	2.828	22736.05
14.010	196455.06	0.824	0.822	0.998	0.843	0.976	2.828	22743.21
14.020	196602.59	0.824	0.822	0.998	0.843	0.976	2.828	22750.36
14.030	196750.09	0.824	0.822	0.998	0.843	0.976	2.828	22757.51
14.040	196897.58	0.824	0.822	0.998	0.843	0.976	2.828	22764.67
14.050	197045.17	0.824	0.822	0.998	0.843	0.976	2.827	22771.83
14.060	197192.61	0.824	0.822	0.998	0.843	0.976	2.827	22778.97
14.070	197340.19	0.824	0.822	0.998	0.843	0.976	2.827	22786.13
14.080	197487.73	0.824	0.822	0.998	0.843	0.976	2.827	22793.28
14.090	197635.38	0.824	0.822	0.998	0.843	0.976	2.827	22800.44
14.100	197782.86	0.824	0.822	0.998	0.843	0.976	2.827	22807.60
14.110	197930.42	0.824	0.822	0.998	0.843	0.975	2.826	22814.75
14.120	198078.02	0.824	0.822	0.998	0.843	0.975	2.826	22821.90
14.130	198225.66	0.824	0.822	0.998	0.843	0.975	2.826	22829.05
14.140	198373.22	0.824	0.822	0.998	0.843	0.975	2.826	22836.21
14.150	198520.84	0.824	0.823	0.998	0.843	0.975	2.826	22843.37
14.160	198668.47	0.824	0.823	0.998	0.843	0.975	2.826	22850.52
14.170	198816.13	0.824	0.823	0.998	0.843	0.975	2.825	22857.67
14.180	198963.80	0.824	0.823	0.998	0.843	0.975	2.825	22864.82
14.190	199111.45	0.824	0.823	0.998	0.843	0.975	2.825	22871.98
14.200	199259.09	0.824	0.823	0.998	0.843	0.975	2.825	22879.14
14.210	199406.72	0.824	0.823	0.998	0.843	0.975	2.825	22886.29
14.220	199554.47	0.825	0.823	0.998	0.844	0.975	2.825	22893.45
14.230	199702.17	0.825	0.823	0.998	0.844	0.975	2.824	22900.60
14.240	199849.91	0.825	0.823	0.998	0.844	0.975	2.824	22907.75
14.250	199997.63	0.825	0.823	0.998	0.844	0.975	2.824	22914.91
14.260	200145.30	0.825	0.823	0.998	0.844	0.975	2.824	22922.06
14.270	200293.02	0.825	0.823	0.998	0.844	0.975	2.824	22929.22
14.280	200440.77	0.825	0.823	0.998	0.844	0.975	2.824	22936.37
14.290	200588.63	0.825	0.823	0.998	0.844	0.975	2.823	22943.52
14.300	200736.28	0.825	0.823	0.998	0.844	0.975	2.823	22950.68
14.310	200884.11	0.825	0.823	0.998	0.844	0.975	2.823	22957.83
14.320	201031.83	0.825	0.823	0.998	0.844	0.975	2.823	22964.99
14.330	201179.73	0.825	0.823	0.998	0.844	0.975	2.823	22972.14
14.340	201327.64	0.825	0.823	0.998	0.844	0.975	2.823	22979.29
14.350	201475.33	0.825	0.823	0.998	0.844	0.975	2.823	22986.45
14.360	201623.16	0.825	0.823	0.998	0.844	0.975	2.822	22993.60
14.370	201771.06	0.825	0.823	0.998	0.844	0.975	2.822	23000.76
14.380	201918.92	0.825	0.823	0.998	0.844	0.975	2.822	23007.91
14.390	202066.88	0.825	0.823	0.998	0.844	0.975	2.822	23015.09
14.400	202214.63	0.825	0.823	0.998	0.844	0.975	2.822	23022.27
14.410	202362.53	0.825	0.823	0.998	0.844	0.975	2.822	23029.44
14.420	202510.45	0.825	0.823	0.998	0.844	0.975	2.821	23036.62
14.430	202658.42	0.825	0.823	0.998	0.844	0.975	2.821	23043.80
14.440	202806.33	0.825	0.823	0.998	0.844	0.975	2.821	23050.97
14.450	202954.09	0.825	0.823	0.998	0.845	0.975	2.821	23058.16
14.460	203102.11	0.825	0.823	0.998	0.845	0.975	2.821	23065.33
14.470	203250.09	0.825	0.823	0.998	0.845	0.975	2.821	23072.51
14.480	203398.02	0.825	0.824	0.998	0.845	0.975	2.821	23079.69
14.490	203546.00	0.825	0.824	0.998	0.845	0.975	2.820	23086.86
14.500	203693.95	0.825	0.824	0.998	0.845	0.975	2.820	23094.04

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
14.510	203841.95	0.825	0.824	0.998	0.845	0.975	2.820	23101.22
14.520	203989.98	0.825	0.824	0.998	0.845	0.975	2.820	23108.40
14.530	204138.03	0.825	0.824	0.998	0.845	0.975	2.820	23115.58
14.540	204286.00	0.825	0.824	0.998	0.845	0.975	2.820	23122.75
14.550	204434.02	0.825	0.824	0.998	0.845	0.975	2.820	23129.93
14.560	204582.09	0.826	0.824	0.998	0.845	0.975	2.819	23137.11
14.570	204730.11	0.826	0.824	0.998	0.845	0.975	2.819	23144.29
14.580	204878.28	0.826	0.824	0.998	0.845	0.975	2.819	23151.46
14.590	205026.33	0.826	0.824	0.998	0.845	0.975	2.819	23158.64
14.600	205174.36	0.826	0.824	0.998	0.845	0.975	2.819	23165.82
14.610	205322.42	0.826	0.824	0.998	0.845	0.975	2.819	23172.99
14.620	205470.59	0.826	0.824	0.998	0.845	0.975	2.819	23180.17
14.630	205618.78	0.826	0.824	0.998	0.845	0.975	2.818	23187.36
14.640	205766.88	0.826	0.824	0.998	0.845	0.975	2.818	23194.53
14.650	205914.95	0.826	0.824	0.998	0.845	0.975	2.818	23201.71
14.660	206063.11	0.826	0.824	0.998	0.845	0.975	2.818	23208.88
14.670	206211.25	0.826	0.824	0.998	0.846	0.975	2.818	23216.06
14.680	206359.53	0.826	0.824	0.998	0.846	0.975	2.818	23223.24
14.690	206507.64	0.826	0.824	0.998	0.846	0.975	2.818	23230.42
14.700	206655.81	0.826	0.824	0.998	0.846	0.975	2.817	23237.60
14.710	206804.02	0.826	0.824	0.998	0.846	0.975	2.817	23244.77
14.720	206952.27	0.826	0.824	0.998	0.846	0.975	2.817	23252.36
14.730	207100.53	0.826	0.824	0.998	0.846	0.975	2.817	23259.95
14.740	207248.73	0.826	0.824	0.998	0.846	0.975	2.817	23267.53
14.750	207396.97	0.826	0.824	0.998	0.846	0.975	2.817	23275.12
14.760	207545.33	0.826	0.824	0.998	0.846	0.974	2.817	23282.71
14.770	207693.61	0.826	0.824	0.998	0.846	0.974	2.817	23290.29
14.780	207841.88	0.826	0.824	0.998	0.846	0.974	2.817	23297.88
14.790	207990.09	0.826	0.824	0.998	0.846	0.974	2.817	23305.46
14.800	208138.45	0.826	0.824	0.998	0.846	0.974	2.816	23313.05
14.810	208286.78	0.826	0.825	0.998	0.846	0.974	2.816	23320.64
14.820	208435.20	0.826	0.825	0.998	0.846	0.974	2.816	23328.22
14.830	208583.44	0.826	0.825	0.998	0.846	0.974	2.816	23335.81
14.840	208731.75	0.826	0.825	0.998	0.846	0.974	2.816	23343.39
14.850	208880.17	0.826	0.825	0.998	0.846	0.974	2.816	23350.98
14.860	209028.53	0.826	0.825	0.998	0.846	0.974	2.816	23358.57
14.870	209177.00	0.826	0.825	0.998	0.847	0.974	2.816	23366.15
14.880	209325.36	0.826	0.825	0.998	0.847	0.974	2.816	23373.74
14.890	209473.73	0.826	0.825	0.998	0.847	0.974	2.816	23381.32
14.900	209622.16	0.827	0.825	0.998	0.847	0.974	2.816	23388.91
14.910	209770.69	0.827	0.825	0.998	0.847	0.974	2.816	23396.50
14.920	209919.14	0.827	0.825	0.998	0.847	0.974	2.815	23404.08
14.930	210067.53	0.827	0.825	0.998	0.847	0.974	2.815	23411.67
14.940	210215.95	0.827	0.825	0.998	0.847	0.974	2.815	23419.25
14.950	210364.41	0.827	0.825	0.998	0.847	0.974	2.815	23426.84
14.960	210512.97	0.827	0.825	0.998	0.847	0.974	2.815	23434.43
14.970	210661.50	0.827	0.825	0.998	0.847	0.974	2.815	23442.01
14.980	210810.00	0.827	0.825	0.998	0.847	0.974	2.815	23449.61
14.990	210958.44	0.827	0.825	0.998	0.847	0.974	2.815	23457.18
15.000	211107.00	0.827	0.825	0.998	0.847	0.974	2.815	23464.77
15.010	211255.61	0.827	0.825	0.998	0.847	0.974	2.815	23472.36
15.020	211404.25	0.827	0.825	0.998	0.847	0.974	2.815	23479.94
15.030	211552.73	0.827	0.825	0.998	0.847	0.974	2.815	23487.53

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
15.040	211701.31	0.827	0.825	0.998	0.847	0.974	2.814	23495.11
15.050	211849.91	0.827	0.825	0.998	0.847	0.974	2.814	23502.70
15.060	211998.58	0.827	0.825	0.998	0.847	0.974	2.814	23510.29
15.070	212147.17	0.827	0.825	0.998	0.848	0.974	2.814	23517.87
15.080	212295.80	0.827	0.825	0.998	0.848	0.974	2.814	23525.46
15.090	212444.45	0.827	0.825	0.998	0.848	0.974	2.814	23533.04
15.100	212593.13	0.827	0.825	0.998	0.848	0.974	2.814	23540.63
15.110	212741.83	0.827	0.825	0.998	0.848	0.974	2.814	23548.22
15.120	212890.50	0.827	0.825	0.998	0.848	0.974	2.814	23555.80
15.130	213039.16	0.827	0.826	0.998	0.848	0.974	2.814	23563.39
15.140	213187.88	0.827	0.826	0.998	0.848	0.974	2.814	23570.98
15.150	213336.64	0.827	0.826	0.998	0.848	0.974	2.814	23578.56
15.160	213485.41	0.827	0.826	0.998	0.848	0.974	2.814	23586.15
15.170	213634.13	0.827	0.826	0.998	0.848	0.974	2.813	23593.73
15.180	213782.80	0.827	0.826	0.998	0.848	0.974	2.813	23601.32
15.190	213931.53	0.827	0.826	0.998	0.848	0.974	2.813	23608.91
15.200	214080.47	0.827	0.826	0.998	0.848	0.973	2.813	23616.49
15.210	214229.20	0.827	0.826	0.998	0.848	0.973	2.813	23624.08
15.220	214378.00	0.827	0.826	0.998	0.848	0.973	2.813	23631.66
15.230	214526.78	0.827	0.826	0.998	0.848	0.973	2.813	23639.25
15.240	214675.64	0.828	0.826	0.998	0.848	0.973	2.813	23646.83
15.250	214824.47	0.828	0.826	0.998	0.848	0.973	2.813	23654.42
15.260	214973.38	0.828	0.826	0.998	0.849	0.973	2.813	23662.01
15.270	215122.23	0.828	0.826	0.998	0.849	0.973	2.813	23669.59
15.280	215271.06	0.828	0.826	0.998	0.849	0.973	2.813	23677.18
15.290	215420.02	0.828	0.826	0.998	0.849	0.973	2.813	23684.77
15.300	215568.92	0.828	0.826	0.998	0.849	0.973	2.813	23692.35
15.310	215717.86	0.828	0.826	0.998	0.849	0.973	2.812	23699.95
15.320	215866.77	0.828	0.826	0.998	0.849	0.973	2.812	23707.52
15.330	216015.61	0.828	0.826	0.998	0.849	0.973	2.812	23715.11
15.340	216164.58	0.828	0.826	0.998	0.849	0.973	2.812	23722.70
15.350	216313.66	0.828	0.826	0.998	0.849	0.973	2.812	23730.28
15.360	216462.64	0.828	0.826	0.998	0.849	0.973	2.812	23737.88
15.370	216611.56	0.828	0.826	0.998	0.849	0.973	2.812	23745.45
15.380	216760.50	0.828	0.826	0.998	0.849	0.973	2.812	23753.04
15.390	216909.53	0.828	0.826	0.998	0.849	0.973	2.812	23760.63
15.400	217058.58	0.828	0.826	0.998	0.849	0.973	2.812	23768.21
15.410	217207.72	0.828	0.826	0.998	0.849	0.973	2.812	23775.80
15.420	217356.67	0.828	0.826	0.998	0.849	0.973	2.812	23783.38
15.430	217505.77	0.828	0.826	0.998	0.849	0.973	2.812	23790.97
15.440	217654.81	0.828	0.826	0.998	0.850	0.973	2.812	23798.56
15.450	217803.92	0.828	0.826	0.998	0.850	0.973	2.811	23806.14
15.460	217953.08	0.828	0.827	0.998	0.850	0.973	2.811	23813.73
15.470	218102.09	0.828	0.827	0.998	0.850	0.973	2.811	23821.31
15.480	218251.17	0.828	0.827	0.998	0.850	0.973	2.811	23828.90
15.490	218400.34	0.828	0.827	0.998	0.850	0.973	2.811	23836.49
15.500	218549.53	0.828	0.827	0.998	0.850	0.973	2.811	23844.07
15.510	218698.69	0.828	0.827	0.998	0.850	0.973	2.811	23851.67
15.520	218847.86	0.828	0.827	0.998	0.850	0.973	2.811	23859.25
15.530	218997.06	0.828	0.827	0.998	0.850	0.973	2.811	23866.84
15.540	219146.28	0.828	0.827	0.998	0.850	0.973	2.811	23874.42
15.550	219295.56	0.828	0.827	0.998	0.850	0.973	2.811	23882.00
15.560	219444.81	0.828	0.827	0.998	0.850	0.973	2.811	23889.60

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
15.570	219593.91	0.828	0.827	0.998	0.850	0.972	2.811	23897.18
15.580	219743.17	0.829	0.827	0.998	0.850	0.972	2.811	23904.76
15.590	219892.48	0.829	0.827	0.998	0.850	0.972	2.811	23912.36
15.600	220041.78	0.829	0.827	0.998	0.850	0.972	2.811	23919.93
15.610	220191.11	0.829	0.827	0.998	0.850	0.972	2.810	23927.52
15.620	220340.30	0.829	0.827	0.998	0.851	0.972	2.810	23935.11
15.630	220489.66	0.829	0.827	0.998	0.851	0.972	2.810	23942.69
15.640	220639.02	0.829	0.827	0.998	0.851	0.972	2.810	23950.28
15.650	220788.41	0.829	0.827	0.998	0.851	0.972	2.810	23957.86
15.660	220937.73	0.829	0.827	0.998	0.851	0.972	2.810	23965.45
15.670	221087.03	0.829	0.827	0.998	0.851	0.972	2.810	23973.04
15.680	221236.42	0.829	0.827	0.998	0.851	0.972	2.810	23980.62
15.690	221385.84	0.829	0.827	0.998	0.851	0.972	2.810	23988.21
15.700	221535.30	0.829	0.827	0.998	0.851	0.972	2.810	23995.79
15.710	221684.72	0.829	0.827	0.998	0.851	0.972	2.810	24003.38
15.720	221834.09	0.829	0.827	0.998	0.851	0.972	2.810	24010.97
15.730	221983.48	0.829	0.827	0.998	0.851	0.972	2.810	24018.55
15.740	222133.03	0.829	0.827	0.998	0.851	0.972	2.810	24026.15
15.750	222282.55	0.829	0.827	0.998	0.851	0.972	2.810	24033.73
15.760	222432.00	0.829	0.827	0.998	0.851	0.972	2.810	24041.32
15.770	222581.44	0.829	0.827	0.998	0.851	0.972	2.810	24048.90
15.780	222730.94	0.829	0.828	0.998	0.851	0.972	2.809	24056.48
15.790	222880.47	0.829	0.828	0.998	0.852	0.972	2.809	24064.08
15.800	223030.09	0.829	0.828	0.998	0.852	0.972	2.809	24071.65
15.810	223179.55	0.829	0.828	0.998	0.852	0.972	2.809	24079.24
15.820	223329.16	0.829	0.828	0.998	0.852	0.972	2.809	24086.83
15.830	223478.81	0.829	0.828	0.998	0.852	0.972	2.809	24094.41
15.840	223628.30	0.829	0.828	0.998	0.852	0.972	2.809	24102.00
15.850	223777.97	0.829	0.828	0.998	0.852	0.972	2.809	24109.58
15.860	223927.58	0.829	0.828	0.998	0.852	0.972	2.809	24117.17
15.870	224077.19	0.829	0.828	0.998	0.852	0.972	2.809	24124.77
15.880	224226.88	0.829	0.828	0.998	0.852	0.972	2.809	24132.34
15.890	224376.56	0.829	0.828	0.998	0.852	0.971	2.809	24139.93
15.900	224526.17	0.829	0.828	0.998	0.852	0.971	2.809	24147.52
15.910	224675.88	0.830	0.828	0.998	0.852	0.971	2.809	24155.11
15.920	224825.56	0.830	0.828	0.998	0.852	0.971	2.809	24162.70
15.930	224975.31	0.830	0.828	0.998	0.852	0.971	2.809	24170.28
15.940	225125.03	0.830	0.828	0.998	0.852	0.971	2.809	24177.87
15.950	225274.75	0.830	0.828	0.998	0.853	0.971	2.809	24185.45
15.960	225424.50	0.830	0.828	0.998	0.853	0.971	2.808	24193.03
15.970	225574.28	0.830	0.828	0.998	0.853	0.971	2.808	24200.62
15.980	225724.08	0.830	0.828	0.998	0.853	0.971	2.808	24208.21
15.990	225873.94	0.830	0.828	0.998	0.853	0.971	2.808	24215.80
16.000	226023.69	0.830	0.828	0.998	0.853	0.971	2.808	24223.38
16.010	226173.50	0.830	0.828	0.998	0.853	0.971	2.808	24230.80
16.020	226323.33	0.830	0.828	0.998	0.853	0.971	2.808	24238.23
16.030	226473.23	0.830	0.828	0.998	0.853	0.971	2.808	24245.65
16.040	226623.16	0.830	0.828	0.998	0.853	0.971	2.808	24253.08
16.050	226772.95	0.830	0.828	0.998	0.853	0.971	2.808	24260.50
16.060	226922.80	0.830	0.828	0.998	0.853	0.971	2.808	24267.93
16.070	227072.70	0.830	0.828	0.998	0.853	0.971	2.808	24275.36
16.080	227222.64	0.830	0.828	0.998	0.853	0.971	2.808	24282.78
16.090	227372.61	0.830	0.828	0.998	0.853	0.971	2.808	24290.21

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
16.100	227522.44	0.830	0.829	0.998	0.853	0.971	2.808	24297.63
16.110	227672.39	0.830	0.829	0.998	0.853	0.971	2.808	24305.05
16.120	227822.38	0.830	0.829	0.998	0.853	0.971	2.807	24312.48
16.130	227972.36	0.830	0.829	0.998	0.854	0.971	2.807	24319.91
16.140	228122.48	0.830	0.829	0.998	0.854	0.971	2.807	24327.33
16.150	228272.30	0.830	0.829	0.998	0.854	0.971	2.807	24334.76
16.160	228422.28	0.830	0.829	0.998	0.854	0.971	2.807	24342.18
16.170	228572.33	0.830	0.829	0.998	0.854	0.971	2.807	24349.61
16.180	228722.44	0.830	0.829	0.998	0.854	0.971	2.807	24357.03
16.190	228872.52	0.830	0.829	0.998	0.854	0.971	2.807	24364.46
16.200	229022.52	0.830	0.829	0.998	0.854	0.971	2.807	24371.89
16.210	229172.50	0.830	0.829	0.998	0.854	0.971	2.807	24379.31
16.220	229322.70	0.830	0.829	0.998	0.854	0.971	2.807	24386.74
16.230	229472.77	0.830	0.829	0.998	0.854	0.971	2.807	24394.16
16.240	229622.92	0.831	0.829	0.998	0.854	0.971	2.807	24401.59
16.250	229773.00	0.831	0.829	0.998	0.854	0.970	2.807	24409.02
16.260	229923.09	0.831	0.829	0.998	0.854	0.970	2.807	24416.43
16.270	230073.28	0.831	0.829	0.998	0.854	0.970	2.806	24423.87
16.280	230223.53	0.831	0.829	0.998	0.854	0.970	2.806	24431.29
16.290	230373.70	0.831	0.829	0.998	0.854	0.970	2.806	24438.71
16.300	230523.84	0.831	0.829	0.998	0.854	0.970	2.806	24446.14
16.310	230673.97	0.831	0.829	0.998	0.854	0.970	2.806	24453.56
16.320	230824.20	0.831	0.829	0.998	0.855	0.970	2.806	24460.99
16.330	230974.47	0.831	0.829	0.998	0.855	0.970	2.806	24468.41
16.340	231124.70	0.831	0.829	0.998	0.855	0.970	2.806	24475.84
16.350	231274.89	0.831	0.829	0.998	0.855	0.970	2.806	24483.27
16.360	231425.09	0.831	0.829	0.998	0.855	0.970	2.806	24490.69
16.370	231575.47	0.831	0.829	0.998	0.855	0.970	2.806	24498.12
16.380	231725.80	0.831	0.829	0.998	0.855	0.970	2.806	24505.54
16.390	231876.00	0.831	0.829	0.998	0.855	0.970	2.806	24512.96
16.400	232026.23	0.831	0.829	0.998	0.855	0.970	2.806	24520.40
16.410	232176.61	0.831	0.829	0.998	0.855	0.970	2.806	24527.81
16.420	232326.95	0.831	0.830	0.998	0.855	0.970	2.806	24535.24
16.430	232477.34	0.831	0.830	0.998	0.855	0.970	2.806	24542.67
16.440	232627.69	0.831	0.830	0.998	0.855	0.970	2.805	24550.09
16.450	232777.97	0.831	0.830	0.998	0.855	0.970	2.805	24557.52
16.460	232928.31	0.831	0.830	0.998	0.855	0.970	2.805	24564.94
16.470	233078.80	0.831	0.830	0.998	0.855	0.970	2.805	24572.37
16.480	233229.25	0.831	0.830	0.998	0.855	0.970	2.805	24579.79
16.490	233379.67	0.831	0.830	0.998	0.855	0.970	2.805	24587.22
16.500	233530.06	0.831	0.830	0.998	0.856	0.970	2.805	24594.65
16.510	233680.44	0.831	0.830	0.998	0.856	0.970	2.805	24602.07
16.520	233830.92	0.831	0.830	0.998	0.856	0.970	2.805	24609.50
16.530	233981.45	0.831	0.830	0.998	0.856	0.970	2.805	24616.93
16.540	234131.97	0.831	0.830	0.998	0.856	0.970	2.805	24624.34
16.550	234282.39	0.831	0.830	0.998	0.856	0.970	2.805	24631.78
16.560	234432.89	0.832	0.830	0.998	0.856	0.970	2.805	24639.19
16.570	234583.45	0.832	0.830	0.998	0.856	0.970	2.805	24646.62
16.580	234734.05	0.832	0.830	0.998	0.856	0.970	2.805	24654.05
16.590	234884.53	0.832	0.830	0.998	0.856	0.970	2.805	24661.47
16.600	235035.06	0.832	0.830	0.998	0.856	0.970	2.805	24668.90
16.610	235185.66	0.832	0.830	0.998	0.856	0.970	2.805	24676.32
16.620	235336.30	0.832	0.830	0.998	0.856	0.970	2.804	24683.75

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
16.630	235486.86	0.832	0.830	0.998	0.856	0.970	2.804	24691.17
16.640	235637.45	0.832	0.830	0.998	0.856	0.969	2.804	24698.60
16.650	235788.06	0.832	0.830	0.998	0.856	0.969	2.804	24706.03
16.660	235938.69	0.832	0.830	0.998	0.856	0.969	2.804	24713.45
16.670	236089.36	0.832	0.830	0.998	0.857	0.969	2.804	24720.88
16.680	236240.03	0.832	0.830	0.998	0.857	0.969	2.804	24728.30
16.690	236390.66	0.832	0.830	0.998	0.857	0.969	2.804	24735.72
16.700	236541.36	0.832	0.830	0.998	0.857	0.969	2.804	24743.15
16.710	236692.05	0.832	0.830	0.998	0.857	0.969	2.804	24750.57
16.720	236842.84	0.832	0.830	0.998	0.857	0.969	2.804	24758.00
16.730	236993.52	0.832	0.830	0.998	0.857	0.969	2.804	24765.43
16.740	237144.27	0.832	0.831	0.998	0.857	0.969	2.804	24772.85
16.750	237294.97	0.832	0.831	0.998	0.857	0.969	2.804	24780.28
16.760	237445.83	0.832	0.831	0.998	0.857	0.969	2.804	24787.70
16.770	237596.67	0.832	0.831	0.998	0.857	0.969	2.804	24795.13
16.780	237747.42	0.832	0.831	0.998	0.857	0.969	2.804	24802.56
16.790	237898.13	0.832	0.831	0.998	0.857	0.969	2.804	24809.98
16.800	238048.97	0.832	0.831	0.998	0.857	0.969	2.804	24817.41
16.810	238199.81	0.832	0.831	0.998	0.857	0.969	2.803	24824.83
16.820	238350.77	0.832	0.831	0.998	0.857	0.969	2.803	24832.26
16.830	238501.56	0.832	0.831	0.998	0.857	0.969	2.803	24839.69
16.840	238652.41	0.832	0.831	0.998	0.857	0.969	2.803	24847.10
16.850	238803.25	0.832	0.831	0.998	0.858	0.969	2.803	24854.53
16.860	238954.28	0.832	0.831	0.998	0.858	0.969	2.803	24861.96
16.870	239105.20	0.832	0.831	0.998	0.858	0.969	2.803	24869.38
16.880	239256.06	0.832	0.831	0.998	0.858	0.969	2.803	24876.81
16.890	239407.02	0.833	0.831	0.998	0.858	0.969	2.803	24884.23
16.900	239557.83	0.833	0.831	0.998	0.858	0.969	2.803	24891.66
16.910	239708.94	0.833	0.831	0.998	0.858	0.969	2.803	24899.08
16.920	239859.86	0.833	0.831	0.998	0.858	0.969	2.803	24906.51
16.930	240010.91	0.833	0.831	0.998	0.858	0.969	2.803	24913.94
16.940	240161.91	0.833	0.831	0.998	0.858	0.969	2.803	24921.36
16.950	240312.88	0.833	0.831	0.998	0.858	0.969	2.803	24929.02
16.960	240463.94	0.833	0.831	0.998	0.858	0.969	2.803	24936.67
16.970	240615.03	0.833	0.831	0.998	0.858	0.969	2.803	24944.32
16.980	240766.03	0.833	0.831	0.998	0.858	0.969	2.803	24951.99
16.990	240917.02	0.833	0.831	0.998	0.858	0.968	2.803	24959.64
17.000	241068.23	0.833	0.831	0.998	0.858	0.968	2.803	24967.29
17.010	241219.34	0.833	0.831	0.998	0.858	0.968	2.803	24974.94
17.020	241370.52	0.833	0.831	0.998	0.859	0.968	2.803	24982.59
17.030	241521.44	0.833	0.831	0.998	0.859	0.968	2.803	24990.25
17.040	241672.59	0.833	0.831	0.998	0.859	0.968	2.803	24997.89
17.050	241823.78	0.833	0.832	0.998	0.859	0.968	2.803	25005.54
17.060	241975.02	0.833	0.832	0.998	0.859	0.968	2.803	25013.20
17.070	242126.13	0.833	0.832	0.998	0.859	0.968	2.803	25020.84
17.080	242277.22	0.833	0.832	0.998	0.859	0.968	2.803	25028.49
17.090	242428.41	0.833	0.832	0.998	0.859	0.968	2.803	25036.14
17.100	242579.78	0.833	0.832	0.998	0.859	0.968	2.803	25043.80
17.110	242731.06	0.833	0.832	0.998	0.859	0.968	2.803	25051.46
17.120	242882.17	0.833	0.832	0.998	0.859	0.968	2.803	25059.10
17.130	243033.39	0.833	0.832	0.998	0.859	0.968	2.803	25066.76
17.140	243184.67	0.833	0.832	0.998	0.859	0.968	2.802	25074.40
17.150	243336.02	0.833	0.832	0.998	0.859	0.968	2.802	25082.05

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
17.160	243487.30	0.833	0.832	0.998	0.859	0.968	2.802	25089.71
17.170	243638.55	0.833	0.832	0.998	0.859	0.968	2.802	25097.35
17.180	243789.86	0.833	0.832	0.998	0.859	0.968	2.802	25105.01
17.190	243941.11	0.833	0.832	0.998	0.860	0.968	2.802	25112.65
17.200	244092.61	0.833	0.832	0.998	0.860	0.968	2.802	25120.31
17.210	244243.92	0.834	0.832	0.998	0.860	0.968	2.802	25127.96
17.220	244395.27	0.834	0.832	0.998	0.860	0.968	2.802	25135.60
17.230	244546.52	0.834	0.832	0.998	0.860	0.968	2.802	25143.26
17.240	244697.98	0.834	0.832	0.998	0.860	0.968	2.802	25150.91
17.250	244849.41	0.834	0.832	0.998	0.860	0.968	2.802	25158.56
17.260	245000.88	0.834	0.832	0.998	0.860	0.968	2.802	25166.22
17.270	245152.27	0.834	0.832	0.998	0.860	0.968	2.802	25173.87
17.280	245303.80	0.834	0.832	0.998	0.860	0.968	2.802	25181.52
17.290	245455.22	0.834	0.832	0.998	0.860	0.968	2.802	25189.16
17.300	245606.81	0.834	0.832	0.998	0.860	0.968	2.802	25196.81
17.310	245758.28	0.834	0.832	0.998	0.860	0.968	2.802	25204.47
17.320	245909.59	0.834	0.832	0.998	0.860	0.968	2.802	25212.12
17.330	246061.28	0.834	0.832	0.998	0.860	0.968	2.802	25219.77
17.340	246212.64	0.834	0.832	0.998	0.860	0.968	2.802	25227.41
17.350	246364.31	0.834	0.832	0.998	0.860	0.968	2.802	25235.00
17.360	246515.88	0.834	0.833	0.998	0.860	0.967	2.802	25242.58
17.370	246667.30	0.834	0.833	0.998	0.861	0.967	2.802	25250.15
17.380	246818.84	0.834	0.833	0.998	0.861	0.967	2.802	25257.73
17.390	246970.47	0.834	0.833	0.998	0.861	0.967	2.802	25265.30
17.400	247122.22	0.834	0.833	0.998	0.861	0.967	2.802	25272.88
17.410	247273.88	0.834	0.833	0.998	0.861	0.967	2.802	25280.46
17.420	247425.33	0.834	0.833	0.998	0.861	0.967	2.802	25288.03
17.430	247576.91	0.834	0.833	0.998	0.861	0.967	2.802	25295.61
17.440	247728.55	0.834	0.833	0.998	0.861	0.967	2.802	25303.19
17.450	247880.39	0.834	0.833	0.998	0.861	0.967	2.802	25310.76
17.460	248031.94	0.834	0.833	0.998	0.861	0.967	2.802	25318.34
17.470	248183.56	0.834	0.833	0.998	0.861	0.967	2.802	25325.91
17.480	248335.20	0.834	0.833	0.998	0.861	0.967	2.802	25333.49
17.490	248487.06	0.834	0.833	0.998	0.861	0.967	2.802	25341.07
17.500	248638.89	0.834	0.833	0.998	0.861	0.967	2.802	25348.64
17.510	248790.47	0.834	0.833	0.998	0.861	0.967	2.802	25356.23
17.520	248942.28	0.835	0.833	0.998	0.861	0.967	2.802	25363.79
17.530	249094.06	0.835	0.833	0.998	0.861	0.967	2.802	25371.38
17.540	249245.95	0.835	0.833	0.998	0.862	0.967	2.802	25378.96
17.550	249397.75	0.835	0.833	0.998	0.862	0.967	2.802	25386.53
17.560	249549.39	0.835	0.833	0.998	0.862	0.967	2.802	25394.11
17.570	249701.23	0.835	0.833	0.998	0.862	0.967	2.802	25401.68
17.580	249853.03	0.835	0.833	0.998	0.862	0.967	2.802	25409.26
17.590	250004.98	0.835	0.833	0.998	0.862	0.967	2.802	25416.84
17.600	250156.81	0.835	0.833	0.998	0.862	0.967	2.802	25424.41
17.610	250308.59	0.835	0.833	0.998	0.862	0.967	2.802	25431.99
17.620	250460.56	0.835	0.833	0.998	0.862	0.967	2.802	25439.56
17.630	250612.38	0.835	0.833	0.998	0.862	0.967	2.802	25447.14
17.640	250764.45	0.835	0.833	0.998	0.862	0.967	2.802	25454.72
17.650	250916.28	0.835	0.833	0.998	0.862	0.967	2.802	25462.29
17.660	251068.25	0.835	0.833	0.998	0.862	0.967	2.802	25469.88
17.670	251220.17	0.835	0.834	0.998	0.862	0.967	2.802	25477.44
17.680	251372.14	0.835	0.834	0.998	0.862	0.967	2.802	25485.02

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
17.690	251524.17	0.835	0.834	0.998	0.862	0.967	2.802	25492.61
17.700	251676.14	0.835	0.834	0.998	0.862	0.967	2.802	25500.18
17.710	251828.00	0.835	0.834	0.998	0.862	0.967	2.802	25507.76
17.720	251980.00	0.835	0.834	0.998	0.863	0.967	2.802	25515.33
17.730	252132.17	0.835	0.834	0.998	0.863	0.967	2.802	25522.91
17.740	252284.19	0.835	0.834	0.998	0.863	0.966	2.802	25530.48
17.750	252436.11	0.835	0.834	0.998	0.863	0.966	2.802	25538.06
17.760	252588.30	0.835	0.834	0.998	0.863	0.966	2.802	25545.64
17.770	252740.39	0.835	0.834	0.998	0.863	0.966	2.801	25553.21
17.780	252892.50	0.835	0.834	0.998	0.863	0.966	2.801	25560.79
17.790	253044.64	0.835	0.834	0.998	0.863	0.966	2.801	25568.37
17.800	253196.80	0.835	0.834	0.998	0.863	0.966	2.801	25575.94
17.810	253348.77	0.835	0.834	0.998	0.863	0.966	2.801	25583.52
17.820	253500.91	0.835	0.834	0.998	0.863	0.966	2.801	25591.10
17.830	253653.16	0.835	0.834	0.998	0.863	0.966	2.801	25598.67
17.840	253805.31	0.836	0.834	0.998	0.863	0.966	2.801	25606.25
17.850	253957.45	0.836	0.834	0.998	0.863	0.966	2.801	25613.82
17.860	254109.70	0.836	0.834	0.998	0.863	0.966	2.801	25621.41
17.870	254261.98	0.836	0.834	0.998	0.863	0.966	2.801	25628.98
17.880	254413.98	0.836	0.834	0.998	0.863	0.966	2.801	25636.55
17.890	254566.45	0.836	0.834	0.998	0.864	0.966	2.801	25644.14
17.900	254718.59	0.836	0.834	0.998	0.864	0.966	2.801	25651.71
17.910	254870.78	0.836	0.834	0.998	0.864	0.966	2.801	25659.28
17.920	255023.22	0.836	0.834	0.998	0.864	0.966	2.801	25666.87
17.930	255175.39	0.836	0.834	0.998	0.864	0.966	2.801	25674.44
17.940	255327.75	0.836	0.834	0.998	0.864	0.966	2.801	25682.02
17.950	255480.02	0.836	0.834	0.998	0.864	0.966	2.801	25689.59
17.960	255632.30	0.836	0.834	0.998	0.864	0.966	2.801	25697.16
17.970	255784.58	0.836	0.834	0.998	0.864	0.966	2.801	25704.74
17.980	255937.16	0.836	0.835	0.998	0.864	0.966	2.801	25712.32
17.990	256089.53	0.836	0.835	0.998	0.864	0.966	2.801	25719.90
18.000	256241.89	0.836	0.835	0.998	0.864	0.966	2.801	25727.47
18.010	256394.20	0.836	0.835	0.998	0.864	0.966	2.801	25734.85
18.020	256546.50	0.836	0.835	0.998	0.864	0.966	2.801	25742.23
18.030	256699.03	0.836	0.835	0.998	0.864	0.966	2.801	25749.60
18.040	256851.64	0.836	0.835	0.998	0.864	0.966	2.801	25756.98
18.050	257003.91	0.836	0.835	0.998	0.864	0.966	2.801	25764.35
18.060	257156.34	0.836	0.835	0.998	0.864	0.966	2.801	25771.73
18.070	257308.84	0.836	0.835	0.998	0.864	0.966	2.801	25779.10
18.080	257461.27	0.836	0.835	0.998	0.864	0.966	2.801	25786.48
18.090	257613.98	0.836	0.835	0.998	0.864	0.966	2.801	25793.86
18.100	257766.20	0.836	0.835	0.998	0.864	0.966	2.801	25801.22
18.110	257918.78	0.836	0.835	0.998	0.864	0.966	2.801	25808.61
18.120	258071.16	0.836	0.835	0.998	0.865	0.966	2.801	25815.98
18.130	258223.86	0.836	0.835	0.998	0.865	0.966	2.801	25823.35
18.140	258376.38	0.836	0.835	0.998	0.865	0.966	2.801	25830.74
18.150	258528.84	0.837	0.835	0.998	0.865	0.966	2.801	25838.10
18.160	258681.41	0.837	0.835	0.998	0.865	0.966	2.801	25845.48
18.170	258834.03	0.837	0.835	0.998	0.865	0.966	2.801	25852.86
18.180	258986.67	0.837	0.835	0.998	0.865	0.966	2.801	25860.23
18.190	259139.28	0.837	0.835	0.998	0.865	0.966	2.801	25867.61
18.200	259291.75	0.837	0.835	0.998	0.865	0.966	2.801	25874.98
18.210	259444.41	0.837	0.835	0.998	0.865	0.966	2.801	25882.36

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
18.220	259597.02	0.837	0.835	0.998	0.865	0.966	2.801	25889.73
18.230	259749.70	0.837	0.835	0.998	0.865	0.966	2.801	25897.11
18.240	259902.42	0.837	0.835	0.998	0.865	0.966	2.801	25904.48
18.250	260054.95	0.837	0.835	0.998	0.865	0.966	2.801	25911.86
18.260	260207.50	0.837	0.835	0.998	0.865	0.966	2.801	25919.23
18.270	260360.27	0.837	0.835	0.998	0.865	0.966	2.801	25926.61
18.280	260513.02	0.837	0.836	0.998	0.865	0.966	2.800	25933.99
18.290	260665.67	0.837	0.836	0.998	0.865	0.966	2.800	25941.36
18.300	260818.31	0.837	0.836	0.998	0.865	0.966	2.800	25948.73
18.310	260971.06	0.837	0.836	0.998	0.865	0.966	2.800	25956.11
18.320	261123.83	0.837	0.836	0.998	0.865	0.966	2.800	25963.49
18.330	261276.61	0.837	0.836	0.998	0.865	0.966	2.800	25970.86
18.340	261429.30	0.837	0.836	0.998	0.865	0.966	2.800	25978.24
18.350	261582.13	0.837	0.836	0.998	0.865	0.966	2.800	25985.62
18.360	261734.89	0.837	0.836	0.998	0.865	0.966	2.800	25992.99
18.370	261887.69	0.837	0.836	0.998	0.865	0.966	2.800	26000.37
18.380	262040.47	0.837	0.836	0.998	0.865	0.966	2.800	26007.73
18.390	262193.34	0.837	0.836	0.998	0.865	0.966	2.800	26015.11
18.400	262346.09	0.837	0.836	0.998	0.865	0.966	2.800	26022.49
18.410	262498.84	0.837	0.836	0.998	0.865	0.966	2.800	26029.86
18.420	262651.78	0.837	0.836	0.998	0.865	0.966	2.800	26037.24
18.430	262804.59	0.837	0.836	0.998	0.865	0.966	2.800	26044.61
18.440	262957.41	0.837	0.836	0.998	0.865	0.966	2.800	26051.99
18.450	263110.38	0.837	0.836	0.998	0.866	0.966	2.800	26059.37
18.460	263263.19	0.837	0.836	0.998	0.866	0.966	2.800	26066.74
18.470	263416.09	0.838	0.836	0.998	0.866	0.966	2.800	26074.12
18.480	263569.06	0.838	0.836	0.998	0.866	0.966	2.800	26081.49
18.490	263721.88	0.838	0.836	0.998	0.866	0.966	2.800	26088.87
18.500	263874.78	0.838	0.836	0.998	0.866	0.966	2.800	26096.25
18.510	264027.84	0.838	0.836	0.998	0.866	0.966	2.800	26103.62
18.520	264180.81	0.838	0.836	0.998	0.866	0.966	2.800	26111.00
18.530	264333.66	0.838	0.836	0.998	0.866	0.966	2.800	26118.36
18.540	264486.56	0.838	0.836	0.998	0.866	0.966	2.800	26125.74
18.550	264639.69	0.838	0.836	0.998	0.866	0.966	2.800	26133.12
18.560	264792.69	0.838	0.836	0.998	0.866	0.966	2.800	26140.49
18.570	264945.84	0.838	0.836	0.998	0.866	0.966	2.800	26147.87
18.580	265098.81	0.838	0.836	0.998	0.866	0.966	2.800	26155.23
18.590	265251.66	0.838	0.837	0.998	0.866	0.966	2.800	26162.62
18.600	265404.63	0.838	0.837	0.998	0.866	0.966	2.800	26169.99
18.610	265557.75	0.838	0.837	0.998	0.866	0.966	2.800	26177.36
18.620	265710.88	0.838	0.837	0.998	0.866	0.966	2.800	26184.74
18.630	265863.97	0.838	0.837	0.998	0.866	0.966	2.800	26192.11
18.640	266017.09	0.838	0.837	0.998	0.866	0.966	2.800	26199.48
18.650	266170.06	0.838	0.837	0.998	0.866	0.966	2.800	26206.87
18.660	266323.34	0.838	0.837	0.998	0.866	0.966	2.800	26214.24
18.670	266476.38	0.838	0.837	0.998	0.866	0.966	2.800	26221.61
18.680	266629.50	0.838	0.837	0.998	0.866	0.966	2.800	26228.99
18.690	266782.59	0.838	0.837	0.998	0.866	0.966	2.800	26236.36
18.700	266935.75	0.838	0.837	0.998	0.866	0.966	2.800	26243.73
18.710	267088.78	0.838	0.837	0.998	0.866	0.966	2.800	26251.11
18.720	267242.09	0.838	0.837	0.998	0.866	0.966	2.800	26258.48
18.730	267395.38	0.838	0.837	0.998	0.866	0.966	2.800	26265.85
18.740	267548.50	0.838	0.837	0.998	0.866	0.966	2.800	26273.23

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
18.750	267701.47	0.838	0.837	0.998	0.866	0.966	2.800	26280.61
18.760	267854.97	0.838	0.837	0.998	0.866	0.966	2.800	26287.97
18.770	268008.13	0.838	0.837	0.998	0.866	0.966	2.800	26295.35
18.780	268161.31	0.839	0.837	0.998	0.867	0.966	2.800	26302.73
18.790	268314.69	0.839	0.837	0.998	0.867	0.966	2.800	26310.10
18.800	268467.84	0.839	0.837	0.998	0.867	0.966	2.799	26317.48
18.810	268621.06	0.839	0.837	0.998	0.867	0.966	2.799	26324.85
18.820	268774.47	0.839	0.837	0.998	0.867	0.966	2.799	26332.22
18.830	268927.63	0.839	0.837	0.998	0.867	0.966	2.799	26339.60
18.840	269080.94	0.839	0.837	0.998	0.867	0.966	2.799	26346.97
18.850	269234.41	0.839	0.837	0.998	0.867	0.966	2.799	26354.35
18.860	269387.75	0.839	0.837	0.998	0.867	0.966	2.799	26361.71
18.870	269541.06	0.839	0.837	0.998	0.867	0.966	2.799	26369.10
18.880	269694.31	0.839	0.837	0.998	0.867	0.966	2.799	26376.47
18.890	269847.63	0.839	0.837	0.998	0.867	0.966	2.799	26383.84
18.900	270001.09	0.839	0.838	0.998	0.867	0.966	2.799	26391.22
18.910	270154.47	0.839	0.838	0.998	0.867	0.966	2.799	26398.59
18.920	270307.97	0.839	0.838	0.998	0.867	0.966	2.799	26405.96
18.930	270461.25	0.839	0.838	0.998	0.867	0.966	2.799	26413.35
18.940	270614.69	0.839	0.838	0.998	0.867	0.966	2.799	26420.71
18.950	270768.13	0.839	0.838	0.998	0.867	0.966	2.799	26428.09
18.960	270921.53	0.839	0.838	0.998	0.867	0.966	2.799	26435.46
18.970	271075.00	0.839	0.838	0.998	0.867	0.966	2.799	26442.84
18.980	271228.41	0.839	0.838	0.998	0.867	0.966	2.799	26450.21
18.990	271381.81	0.839	0.838	0.998	0.867	0.966	2.799	26457.58
19.000	271535.47	0.839	0.838	0.998	0.867	0.966	2.799	26464.96
19.010	271689.03	0.839	0.838	0.998	0.867	0.966	2.799	26472.33
19.020	271842.47	0.839	0.838	0.998	0.867	0.966	2.799	26479.71
19.030	271995.84	0.839	0.838	0.998	0.867	0.966	2.799	26487.09
19.040	272149.38	0.839	0.838	0.998	0.867	0.966	2.799	26494.46
19.050	272303.03	0.839	0.838	0.998	0.867	0.966	2.799	26501.84
19.060	272456.69	0.839	0.838	0.998	0.867	0.966	2.799	26509.21
19.070	272610.16	0.839	0.838	0.998	0.867	0.966	2.799	26516.59
19.080	272763.72	0.839	0.838	0.998	0.867	0.966	2.799	26523.96
19.090	272917.31	0.840	0.838	0.998	0.868	0.966	2.799	26531.34
19.100	273071.09	0.840	0.838	0.998	0.868	0.966	2.799	26538.72
19.110	273224.66	0.840	0.838	0.998	0.868	0.966	2.799	26546.09
19.120	273378.19	0.840	0.838	0.998	0.868	0.966	2.799	26553.47
19.130	273531.69	0.840	0.838	0.998	0.868	0.966	2.799	26560.85
19.140	273685.34	0.840	0.838	0.998	0.868	0.966	2.799	26568.22
19.150	273839.19	0.840	0.838	0.998	0.868	0.966	2.799	26575.60
19.160	273992.88	0.840	0.838	0.998	0.868	0.966	2.799	26582.98
19.170	274146.38	0.840	0.838	0.998	0.868	0.966	2.799	26590.35
19.180	274300.03	0.840	0.838	0.998	0.868	0.966	2.799	26597.73
19.190	274453.81	0.840	0.838	0.998	0.868	0.966	2.799	26605.11
19.200	274607.72	0.840	0.839	0.998	0.868	0.966	2.799	26612.48
19.210	274761.38	0.840	0.839	0.998	0.868	0.966	2.799	26619.86
19.220	274915.00	0.840	0.839	0.998	0.868	0.966	2.799	26627.24
19.230	275068.72	0.840	0.839	0.998	0.868	0.966	2.799	26634.61
19.240	275222.59	0.840	0.839	0.998	0.868	0.966	2.799	26641.99
19.250	275376.22	0.840	0.839	0.998	0.868	0.966	2.799	26649.38
19.260	275530.19	0.840	0.839	0.998	0.868	0.966	2.799	26656.75
19.270	275683.91	0.840	0.839	0.998	0.868	0.966	2.799	26664.12

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
19.280	275837.63	0.840	0.839	0.998	0.868	0.966	2.799	26671.51
19.290	275991.41	0.840	0.839	0.998	0.868	0.966	2.799	26678.87
19.300	276145.31	0.840	0.839	0.998	0.868	0.966	2.799	26686.26
19.310	276299.28	0.840	0.839	0.998	0.868	0.966	2.799	26693.64
19.320	276453.03	0.840	0.839	0.998	0.868	0.966	2.799	26701.01
19.330	276606.91	0.840	0.839	0.998	0.868	0.966	2.799	26708.39
19.340	276760.81	0.840	0.839	0.998	0.868	0.966	2.799	26715.76
19.350	276914.75	0.840	0.839	0.998	0.868	0.966	2.799	26723.14
19.360	277068.69	0.840	0.839	0.998	0.868	0.966	2.799	26730.53
19.370	277222.50	0.840	0.839	0.998	0.868	0.966	2.799	26737.89
19.380	277376.31	0.840	0.839	0.998	0.868	0.966	2.799	26745.28
19.390	277530.47	0.840	0.839	0.998	0.869	0.966	2.799	26752.65
19.400	277684.28	0.841	0.839	0.998	0.869	0.966	2.799	26760.03
19.410	277838.19	0.841	0.839	0.998	0.869	0.966	2.799	26767.40
19.420	277992.13	0.841	0.839	0.998	0.869	0.966	2.799	26774.78
19.430	278146.09	0.841	0.839	0.998	0.869	0.966	2.799	26782.16
19.440	278300.19	0.841	0.839	0.998	0.869	0.966	2.799	26789.53
19.450	278454.22	0.841	0.839	0.998	0.869	0.966	2.799	26796.92
19.460	278608.19	0.841	0.839	0.998	0.869	0.966	2.799	26804.29
19.470	278762.25	0.841	0.839	0.998	0.869	0.966	2.799	26811.67
19.480	278916.19	0.841	0.839	0.998	0.869	0.966	2.799	26819.05
19.490	279070.34	0.841	0.839	0.998	0.869	0.966	2.799	26826.41
19.500	279224.53	0.841	0.839	0.998	0.869	0.966	2.799	26833.80
19.510	279378.44	0.841	0.840	0.998	0.869	0.966	2.799	26841.18
19.520	279532.53	0.841	0.840	0.998	0.869	0.966	2.799	26848.55
19.530	279686.66	0.841	0.840	0.998	0.869	0.966	2.799	26855.93
19.540	279840.84	0.841	0.840	0.998	0.869	0.966	2.799	26863.32
19.550	279995.00	0.841	0.840	0.998	0.869	0.966	2.799	26870.68
19.560	280148.97	0.841	0.840	0.998	0.869	0.966	2.799	26878.06
19.570	280303.13	0.841	0.840	0.998	0.869	0.966	2.799	26885.44
19.580	280457.31	0.841	0.840	0.998	0.869	0.966	2.799	26892.82
19.590	280611.44	0.841	0.840	0.998	0.869	0.966	2.799	26900.19
19.600	280765.63	0.841	0.840	0.998	0.869	0.966	2.799	26907.57
19.610	280919.91	0.841	0.840	0.998	0.869	0.966	2.799	26914.95
19.620	281073.97	0.841	0.840	0.998	0.869	0.966	2.799	26922.32
19.630	281228.28	0.841	0.840	0.998	0.869	0.966	2.799	26929.70
19.640	281382.66	0.841	0.840	0.998	0.869	0.966	2.799	26937.09
19.650	281536.72	0.841	0.840	0.998	0.869	0.966	2.799	26944.46
19.660	281690.94	0.841	0.840	0.998	0.869	0.966	2.799	26951.84
19.670	281845.19	0.841	0.840	0.998	0.869	0.966	2.799	26959.21
19.680	281999.63	0.841	0.840	0.998	0.869	0.966	2.799	26966.59
19.690	282153.81	0.841	0.840	0.998	0.870	0.966	2.799	26973.96
19.700	282308.16	0.841	0.840	0.998	0.870	0.966	2.799	26981.34
19.710	282462.38	0.841	0.840	0.998	0.870	0.966	2.799	26988.72
19.720	282616.78	0.842	0.840	0.998	0.870	0.966	2.799	26996.09
19.730	282771.13	0.842	0.840	0.998	0.870	0.966	2.799	27003.47
19.740	282925.50	0.842	0.840	0.998	0.870	0.966	2.799	27010.85
19.750	283079.78	0.842	0.840	0.998	0.870	0.966	2.799	27018.22
19.760	283234.13	0.842	0.840	0.998	0.870	0.966	2.799	27025.61
19.770	283388.50	0.842	0.840	0.998	0.870	0.966	2.799	27032.98
19.780	283542.97	0.842	0.840	0.998	0.870	0.966	2.799	27040.36
19.790	283697.47	0.842	0.840	0.998	0.870	0.966	2.799	27047.74
19.800	283851.72	0.842	0.840	0.998	0.870	0.966	2.799	27055.11

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
19.810	284006.19	0.842	0.841	0.998	0.870	0.966	2.799	27062.50
19.820	284160.50	0.842	0.841	0.998	0.870	0.966	2.799	27069.87
19.830	284315.00	0.842	0.841	0.998	0.870	0.966	2.799	27077.24
19.840	284469.50	0.842	0.841	0.998	0.870	0.966	2.799	27084.62
19.850	284624.00	0.842	0.841	0.998	0.870	0.966	2.799	27092.00
19.860	284778.34	0.842	0.841	0.998	0.870	0.966	2.799	27099.38
19.870	284932.97	0.842	0.841	0.998	0.870	0.966	2.799	27106.75
19.880	285087.47	0.842	0.841	0.998	0.870	0.966	2.799	27114.13
19.890	285242.06	0.842	0.841	0.998	0.870	0.966	2.799	27121.51
19.900	285396.47	0.842	0.841	0.998	0.870	0.966	2.799	27128.88
19.910	285551.03	0.842	0.841	0.998	0.870	0.966	2.799	27136.27
19.920	285705.63	0.842	0.841	0.998	0.870	0.966	2.799	27143.64
19.930	285860.28	0.842	0.841	0.998	0.870	0.966	2.799	27151.01
19.940	286014.84	0.842	0.841	0.998	0.870	0.966	2.799	27158.40
19.950	286169.28	0.842	0.841	0.998	0.870	0.966	2.799	27165.77
19.960	286323.91	0.842	0.841	0.998	0.870	0.966	2.799	27173.15
19.970	286478.53	0.842	0.841	0.998	0.870	0.966	2.799	27180.52
19.980	286633.25	0.842	0.841	0.998	0.871	0.966	2.799	27187.90
19.990	286787.75	0.842	0.841	0.998	0.871	0.966	2.799	27195.28
20.000	286942.50	0.842	0.841	0.998	0.871	0.966	2.799	27202.66
20.010	287097.03	0.842	0.841	0.998	0.871	0.966	2.799	27209.94
20.020	287251.81	0.842	0.841	0.998	0.871	0.966	2.799	27217.21
20.030	287406.44	0.843	0.841	0.998	0.871	0.966	2.799	27224.49
20.040	287561.06	0.843	0.841	0.998	0.871	0.966	2.799	27231.78
20.050	287715.84	0.843	0.841	0.998	0.871	0.966	2.799	27239.05
20.060	287870.63	0.843	0.841	0.998	0.871	0.966	2.799	27246.33
20.070	288025.22	0.843	0.841	0.998	0.871	0.966	2.799	27253.62
20.080	288180.03	0.843	0.841	0.998	0.871	0.966	2.799	27260.90
20.090	288334.69	0.843	0.841	0.998	0.871	0.966	2.799	27268.18
20.100	288489.53	0.843	0.841	0.998	0.871	0.966	2.799	27275.46
20.110	288644.25	0.843	0.841	0.998	0.871	0.966	2.799	27282.74
20.120	288799.06	0.843	0.842	0.998	0.871	0.966	2.799	27290.02
20.130	288953.94	0.843	0.842	0.998	0.871	0.966	2.799	27297.30
20.140	289108.69	0.843	0.842	0.998	0.871	0.966	2.799	27304.58
20.150	289263.50	0.843	0.842	0.998	0.871	0.966	2.799	27311.85
20.160	289418.31	0.843	0.842	0.998	0.871	0.966	2.799	27319.14
20.170	289573.13	0.843	0.842	0.998	0.871	0.966	2.799	27326.42
20.180	289728.03	0.843	0.842	0.998	0.871	0.966	2.799	27333.70
20.190	289882.91	0.843	0.842	0.998	0.871	0.966	2.799	27340.98
20.200	290037.72	0.843	0.842	0.998	0.871	0.966	2.799	27348.26
20.210	290192.53	0.843	0.842	0.998	0.871	0.967	2.799	27355.54
20.220	290347.50	0.843	0.842	0.998	0.871	0.967	2.799	27362.83
20.230	290502.44	0.843	0.842	0.998	0.871	0.967	2.799	27370.10
20.240	290657.31	0.843	0.842	0.998	0.871	0.967	2.799	27377.39
20.250	290812.16	0.843	0.842	0.998	0.871	0.967	2.799	27384.66
20.260	290967.13	0.843	0.842	0.998	0.871	0.967	2.799	27391.94
20.270	291122.19	0.843	0.842	0.998	0.871	0.967	2.799	27399.22
20.280	291277.13	0.843	0.842	0.998	0.871	0.967	2.799	27406.50
20.290	291431.91	0.843	0.842	0.998	0.871	0.967	2.799	27413.79
20.300	291586.97	0.843	0.842	0.998	0.871	0.967	2.799	27421.06
20.310	291741.84	0.843	0.842	0.998	0.871	0.967	2.799	27428.35
20.320	291897.00	0.843	0.842	0.998	0.871	0.967	2.799	27435.63
20.330	292051.91	0.843	0.842	0.998	0.871	0.967	2.799	27442.90

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
20.340	292206.88	0.844	0.842	0.998	0.871	0.967	2.799	27450.19
20.350	292361.88	0.844	0.842	0.998	0.871	0.967	2.799	27457.46
20.360	292517.00	0.844	0.842	0.998	0.871	0.967	2.799	27464.74
20.370	292672.16	0.844	0.842	0.998	0.871	0.967	2.799	27472.03
20.380	292827.09	0.844	0.842	0.998	0.871	0.967	2.799	27479.30
20.390	292982.16	0.844	0.842	0.998	0.871	0.967	2.799	27486.58
20.400	293137.19	0.844	0.842	0.998	0.871	0.967	2.799	27493.87
20.410	293292.38	0.844	0.842	0.998	0.871	0.967	2.799	27501.14
20.420	293447.47	0.844	0.843	0.998	0.871	0.967	2.799	27508.43
20.430	293602.59	0.844	0.843	0.998	0.871	0.967	2.799	27515.70
20.440	293757.72	0.844	0.843	0.998	0.871	0.967	2.799	27522.99
20.450	293912.66	0.844	0.843	0.998	0.871	0.967	2.799	27530.27
20.460	294067.88	0.844	0.843	0.998	0.871	0.967	2.799	27537.55
20.470	294223.19	0.844	0.843	0.998	0.871	0.967	2.799	27544.83
20.480	294378.19	0.844	0.843	0.998	0.872	0.967	2.799	27552.10
20.490	294533.34	0.844	0.843	0.998	0.872	0.967	2.799	27559.39
20.500	294688.63	0.844	0.843	0.998	0.872	0.967	2.799	27566.67
20.510	294843.81	0.844	0.843	0.998	0.872	0.967	2.799	27573.94
20.520	294999.06	0.844	0.843	0.998	0.872	0.967	2.799	27581.23
20.530	295154.22	0.844	0.843	0.998	0.872	0.967	2.799	27588.51
20.540	295309.41	0.844	0.843	0.998	0.872	0.967	2.799	27595.79
20.550	295464.63	0.844	0.843	0.998	0.872	0.967	2.799	27603.07
20.560	295619.88	0.844	0.843	0.998	0.872	0.967	2.799	27610.35
20.570	295775.34	0.844	0.843	0.998	0.872	0.967	2.799	27617.64
20.580	295930.47	0.844	0.843	0.999	0.872	0.967	2.799	27624.90
20.590	296085.72	0.844	0.843	0.999	0.872	0.967	2.799	27632.19
20.600	296240.97	0.844	0.843	0.999	0.872	0.967	2.799	27639.48
20.610	296396.38	0.844	0.843	0.999	0.872	0.967	2.799	27646.75
20.620	296551.59	0.844	0.843	0.999	0.872	0.967	2.799	27654.03
20.630	296706.94	0.844	0.843	0.999	0.872	0.967	2.799	27661.31
20.640	296862.25	0.844	0.843	0.999	0.872	0.967	2.799	27668.59
20.650	297017.59	0.845	0.843	0.999	0.872	0.967	2.799	27675.88
20.660	297173.00	0.845	0.843	0.999	0.872	0.967	2.799	27683.15
20.670	297328.34	0.845	0.843	0.999	0.872	0.967	2.799	27690.43
20.680	297483.72	0.845	0.843	0.999	0.872	0.967	2.799	27697.71
20.690	297639.06	0.845	0.843	0.999	0.872	0.967	2.799	27704.99
20.700	297794.50	0.845	0.843	0.999	0.872	0.967	2.799	27712.28
20.710	297950.03	0.845	0.843	0.999	0.872	0.967	2.799	27719.55
20.720	298105.34	0.845	0.843	0.999	0.872	0.967	2.799	27726.83
20.730	298260.75	0.845	0.844	0.999	0.872	0.967	2.799	27734.11
20.740	298416.16	0.845	0.844	0.999	0.872	0.967	2.799	27741.39
20.750	298571.72	0.845	0.844	0.999	0.872	0.967	2.799	27748.68
20.760	298727.16	0.845	0.844	0.999	0.872	0.967	2.799	27755.96
20.770	298882.72	0.845	0.844	0.999	0.872	0.967	2.799	27763.24
20.780	299038.00	0.845	0.844	0.999	0.872	0.967	2.799	27770.51
20.790	299193.50	0.845	0.844	0.999	0.872	0.967	2.799	27777.79
20.800	299349.03	0.845	0.844	0.999	0.872	0.967	2.799	27785.07
20.810	299504.56	0.845	0.844	0.999	0.872	0.967	2.799	27792.35
20.820	299660.13	0.845	0.844	0.999	0.872	0.967	2.799	27799.63
20.830	299815.63	0.845	0.844	0.999	0.872	0.968	2.799	27806.92
20.840	299971.25	0.845	0.844	0.999	0.872	0.968	2.799	27814.20
20.850	300126.78	0.845	0.844	0.999	0.872	0.968	2.799	27821.48
20.860	300282.47	0.845	0.844	0.999	0.872	0.968	2.799	27828.76

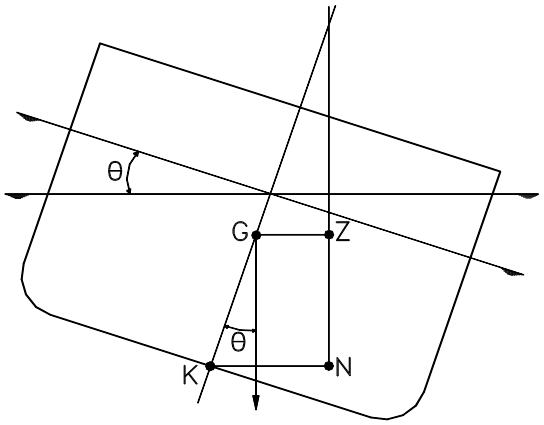
Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
20.870	300438.00	0.845	0.844	0.999	0.872	0.968	2.799	27836.04
20.880	300593.47	0.845	0.844	0.999	0.872	0.968	2.799	27843.31
20.890	300748.97	0.845	0.844	0.999	0.872	0.968	2.799	27850.60
20.900	300904.72	0.845	0.844	0.999	0.872	0.968	2.799	27857.88
20.910	301060.47	0.845	0.844	0.999	0.872	0.968	2.799	27865.15
20.920	301216.00	0.845	0.844	0.999	0.872	0.968	2.799	27872.44
20.930	301371.63	0.845	0.844	0.999	0.872	0.968	2.799	27879.72
20.940	301527.25	0.845	0.844	0.999	0.872	0.968	2.799	27887.00
20.950	301683.03	0.845	0.844	0.999	0.872	0.968	2.799	27894.28
20.960	301838.72	0.846	0.844	0.999	0.872	0.968	2.799	27901.56
20.970	301994.47	0.846	0.844	0.999	0.872	0.968	2.799	27908.84
20.980	302150.00	0.846	0.844	0.999	0.872	0.968	2.799	27916.12
20.990	302305.72	0.846	0.844	0.999	0.872	0.968	2.799	27923.40
21.000	302461.53	0.846	0.844	0.999	0.873	0.968	2.799	27930.69
21.010	302617.28	0.846	0.844	0.999	0.873	0.968	2.799	27937.96
21.020	302773.03	0.846	0.844	0.999	0.873	0.968	2.799	27945.26
21.030	302928.53	0.846	0.844	0.999	0.873	0.968	2.799	27952.56
21.040	303084.47	0.846	0.845	0.999	0.873	0.968	2.799	27959.84
21.050	303240.06	0.846	0.845	0.999	0.873	0.968	2.799	27967.14
21.060	303396.06	0.846	0.845	0.999	0.873	0.968	2.799	27974.43
21.070	303551.88	0.846	0.845	0.999	0.873	0.968	2.799	27981.72
21.080	303707.53	0.846	0.845	0.999	0.873	0.968	2.799	27989.02
21.090	303863.50	0.846	0.845	0.999	0.873	0.968	2.799	27996.31
21.100	304019.31	0.846	0.845	0.999	0.873	0.968	2.799	28003.60
21.110	304175.09	0.846	0.845	0.999	0.873	0.968	2.799	28010.88
21.120	304330.91	0.846	0.845	0.999	0.873	0.968	2.799	28018.18
21.130	304486.72	0.846	0.845	0.999	0.873	0.968	2.799	28025.48
21.140	304642.69	0.846	0.845	0.999	0.873	0.968	2.799	28032.76
21.150	304798.78	0.846	0.845	0.999	0.873	0.968	2.799	28040.06
21.160	304954.53	0.846	0.845	0.999	0.873	0.968	2.799	28047.35
21.170	305110.41	0.846	0.845	0.999	0.873	0.968	2.799	28054.64
21.180	305266.25	0.846	0.845	0.999	0.873	0.968	2.799	28061.94
21.190	305422.16	0.846	0.845	0.999	0.873	0.968	2.799	28069.22
21.200	305578.28	0.846	0.845	0.999	0.873	0.968	2.799	28076.52
21.210	305734.03	0.846	0.845	0.999	0.873	0.968	2.799	28083.80
21.220	305890.13	0.846	0.845	0.999	0.873	0.968	2.799	28091.10
21.230	306045.88	0.846	0.845	0.999	0.873	0.968	2.799	28098.40
21.240	306201.94	0.846	0.845	0.999	0.873	0.968	2.799	28105.68
21.250	306358.00	0.846	0.845	0.999	0.873	0.968	2.799	28112.98
21.260	306513.97	0.846	0.845	0.999	0.873	0.968	2.799	28120.27
21.270	306669.91	0.847	0.845	0.999	0.873	0.968	2.799	28127.56
21.280	306826.09	0.847	0.845	0.999	0.873	0.968	2.799	28134.86
21.290	306982.03	0.847	0.845	0.999	0.873	0.968	2.800	28142.15
21.300	307138.28	0.847	0.845	0.999	0.873	0.968	2.800	28149.44
21.310	307294.28	0.847	0.845	0.999	0.873	0.968	2.800	28156.73
21.320	307450.16	0.847	0.845	0.999	0.873	0.968	2.800	28164.02
21.330	307606.25	0.847	0.845	0.999	0.873	0.968	2.800	28171.33
21.340	307762.50	0.847	0.846	0.999	0.873	0.968	2.800	28178.61
21.350	307918.53	0.847	0.846	0.999	0.873	0.968	2.800	28185.90
21.360	308074.72	0.847	0.846	0.999	0.873	0.968	2.800	28193.19
21.370	308230.75	0.847	0.846	0.999	0.873	0.968	2.800	28200.48
21.380	308386.81	0.847	0.846	0.999	0.873	0.968	2.800	28207.77
21.390	308543.00	0.847	0.846	0.999	0.873	0.968	2.800	28215.06

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
21.400	308699.22	0.847	0.846	0.999	0.873	0.968	2.800	28222.36
21.410	308855.38	0.847	0.846	0.999	0.873	0.968	2.800	28229.65
21.420	309011.41	0.847	0.846	0.999	0.873	0.968	2.800	28236.94
21.430	309167.53	0.847	0.846	0.999	0.873	0.968	2.800	28244.24
21.440	309324.09	0.847	0.846	0.999	0.873	0.968	2.800	28251.52
21.450	309480.13	0.847	0.846	0.999	0.873	0.968	2.800	28258.82
21.460	309636.38	0.847	0.846	0.999	0.873	0.968	2.800	28266.11
21.470	309792.44	0.847	0.846	0.999	0.873	0.968	2.800	28273.39
21.480	309948.81	0.847	0.846	0.999	0.873	0.969	2.800	28280.70
21.490	310105.16	0.847	0.846	0.999	0.873	0.969	2.800	28287.98
21.500	310261.38	0.847	0.846	0.999	0.874	0.969	2.800	28295.28
21.510	310417.59	0.847	0.846	0.999	0.874	0.969	2.800	28302.57
21.520	310573.88	0.847	0.846	0.999	0.874	0.969	2.800	28309.86
21.530	310730.22	0.847	0.846	0.999	0.874	0.969	2.800	28317.16
21.540	310886.66	0.847	0.846	0.999	0.874	0.969	2.800	28324.45
21.550	311042.78	0.847	0.846	0.999	0.874	0.969	2.800	28331.74
21.560	311199.00	0.847	0.846	0.999	0.874	0.969	2.800	28339.03
21.570	311355.34	0.847	0.846	0.999	0.874	0.969	2.800	28346.31
21.580	311511.84	0.848	0.846	0.999	0.874	0.969	2.800	28353.61
21.590	311668.28	0.848	0.846	0.999	0.874	0.969	2.800	28360.90
21.600	311824.59	0.848	0.846	0.999	0.874	0.969	2.800	28368.20
21.610	311980.88	0.848	0.846	0.999	0.874	0.969	2.800	28375.49
21.620	312137.31	0.848	0.846	0.999	0.874	0.969	2.800	28382.78
21.630	312293.81	0.848	0.846	0.999	0.874	0.969	2.800	28390.08
21.640	312450.38	0.848	0.846	0.999	0.874	0.969	2.800	28397.36
21.650	312606.69	0.848	0.847	0.999	0.874	0.969	2.800	28404.66
21.660	312763.06	0.848	0.847	0.999	0.874	0.969	2.800	28411.95
21.670	312919.50	0.848	0.847	0.999	0.874	0.969	2.800	28419.24
21.680	313076.00	0.848	0.847	0.999	0.874	0.969	2.800	28426.54
21.690	313232.56	0.848	0.847	0.999	0.874	0.969	2.800	28433.81
21.700	313388.88	0.848	0.847	0.999	0.874	0.969	2.800	28441.12
21.710	313545.34	0.848	0.847	0.999	0.874	0.969	2.800	28448.41
21.720	313701.91	0.848	0.847	0.999	0.874	0.969	2.800	28455.69
21.730	313858.50	0.848	0.847	0.999	0.874	0.969	2.800	28463.00
21.740	314015.16	0.848	0.847	0.999	0.874	0.969	2.800	28470.28
21.750	314171.59	0.848	0.847	0.999	0.874	0.969	2.800	28477.57
21.760	314328.13	0.848	0.847	0.999	0.874	0.969	2.800	28484.88
21.770	314484.63	0.848	0.847	0.999	0.874	0.969	2.800	28492.16
21.780	314641.34	0.848	0.847	0.999	0.874	0.969	2.800	28499.45
21.790	314797.94	0.848	0.847	0.999	0.874	0.969	2.800	28506.74
21.800	314954.50	0.848	0.847	0.999	0.874	0.969	2.800	28514.03
21.810	315111.00	0.848	0.847	0.999	0.874	0.969	2.800	28521.33
21.820	315267.78	0.848	0.847	0.999	0.874	0.969	2.800	28528.61
21.830	315424.28	0.848	0.847	0.999	0.874	0.969	2.800	28535.91
21.840	315581.09	0.848	0.847	0.999	0.874	0.969	2.800	28543.20
21.850	315737.63	0.848	0.847	0.999	0.874	0.969	2.800	28550.50
21.860	315894.22	0.848	0.847	0.999	0.874	0.969	2.800	28557.79
21.870	316051.09	0.848	0.847	0.999	0.874	0.969	2.801	28565.08
21.880	316207.81	0.848	0.847	0.999	0.874	0.969	2.801	28572.37
21.890	316364.38	0.849	0.847	0.999	0.874	0.969	2.801	28579.67
21.900	316521.06	0.849	0.847	0.999	0.874	0.969	2.801	28586.96
21.910	316677.75	0.849	0.847	0.999	0.874	0.969	2.801	28594.25
21.920	316834.59	0.849	0.847	0.999	0.874	0.969	2.801	28601.53

Draft	Volume	Coefficients						WS Area
m	m^3	Cp	Cb	Cms	Cwp	Cvp	Cws	m^2
21.930	316991.38	0.849	0.847	0.999	0.874	0.969	2.801	28608.83
21.940	317148.09	0.849	0.847	0.999	0.874	0.969	2.801	28616.13
21.950	317304.88	0.849	0.847	0.999	0.874	0.969	2.801	28623.41
21.960	317461.59	0.849	0.848	0.999	0.875	0.969	2.801	28630.71
21.970	317618.25	0.849	0.848	0.999	0.875	0.969	2.801	28637.99
21.980	317775.09	0.849	0.848	0.999	0.875	0.969	2.801	28645.29
21.990	317932.03	0.849	0.848	0.999	0.875	0.969	2.801	28652.59
22.000	318088.78	0.849	0.848	0.999	0.875	0.969	2.801	28659.87

7. CROSS CURVES TABLES OF STABILITY

7.1. General Notes



$$GZ = KN - KG_o \operatorname{sen}\theta$$

OBS.

ASSUMED KG = 0 (ZERO)

SEA WATER DENSITY = 1,025 t/m³

- Displ.: Ship's displacement, in metric tons, on the considered condition.
- Angle: Ship's inclination angle, in degrees, for witch the righting arm is calculated.

- The table of cross curves of stability is applied for small angles of trim.
- The table was made considering the KG at the keel.
- No deck house or superstructure volume has been considered in the calculation.

- The progressive flooding point considered is the boat deck door:

LCG = 37.73 m from A.P.
VCG = 30.79 m from B.L.
TCG = 18.40 m from C.L.

7.2. Cross Curves of Stability

	Angles								
Displ	**5.000^0**	**10.000^0**	**20.000^0**	**30.000^0**	**40.000^0**	**50.000^0**	**60.000^0**	**70.000^0**	**80.000^0**
43000	5.653	10.562	15.107	17.092	17.910	17.770	17.276	17.276	15.986
44000	5.543	10.423	15.014	17.035	17.888	18.035	17.819	17.318	16.006
45000	5.437	10.284	14.923	16.979	17.866	18.048	17.868	17.357	16.025
46000	5.336	10.149	14.833	16.924	17.845	18.060	17.916	17.394	16.043
47000	5.238	10.016	14.744	16.869	17.824	18.072	17.964	17.428	16.059
48000	5.144	9.886	14.656	16.815	17.803	18.083	18.010	17.460	16.074
49000	5.054	9.757	14.570	16.762	17.783	18.095	18.055	17.490	16.089
50000	4.968	9.630	14.485	16.709	17.762	18.107	18.098	17.518	16.102
51000	4.885	9.505	14.401	16.657	17.742	18.118	18.138	17.544	16.115
52000	4.805	9.381	14.317	16.605	17.722	18.129	18.178	17.568	16.127
53000	4.727	9.260	14.235	16.554	17.703	18.141	18.215	17.591	16.138
54000	4.653	9.140	14.154	16.504	17.683	18.152	18.250	17.612	16.148
55000	4.582	9.022	14.074	16.454	17.664	18.163	18.283	17.631	16.158
56000	4.512	8.905	13.995	16.405	17.645	18.174	18.313	17.650	16.167
57000	4.446	8.790	13.917	16.357	17.626	18.185	18.342	17.667	16.175
58000	4.381	8.677	13.840	16.309	17.607	18.196	18.368	17.683	16.182
59000	4.319	8.565	13.763	16.262	17.589	18.206	18.393	17.697	16.189
60000	4.259	8.456	13.688	16.215	17.571	18.217	18.417	17.711	16.196
61000	4.201	8.350	13.613	16.169	17.553	18.228	18.438	17.723	16.202
62000	4.145	8.242	13.539	16.124	17.535	18.238	18.458	17.734	16.207
63000	4.090	8.141	13.466	16.079	17.517	18.249	18.476	17.744	16.212
64000	4.038	8.043	13.395	16.034	17.499	18.259	18.492	17.754	16.216
65000	3.987	7.947	13.324	15.990	17.482	18.269	18.508	17.763	16.222
66000	3.937	7.853	13.253	15.947	17.465	18.280	18.522	17.771	16.225
67000	3.889	7.762	13.183	15.904	17.448	18.290	18.535	17.778	16.228
68000	3.843	7.673	13.113	15.861	17.431	18.300	18.547	17.784	16.231
69000	3.798	7.587	13.044	15.819	17.414	18.310	18.558	17.789	16.234
70000	3.754	7.503	12.976	15.777	17.397	18.320	18.568	17.794	16.236
71000	3.711	7.421	12.909	15.736	17.380	18.330	18.576	17.798	16.238
72000	3.670	7.341	12.842	15.695	17.364	18.340	18.584	17.802	16.240
73000	3.630	7.263	12.776	15.655	17.348	18.350	18.590	17.804	16.241
74000	3.591	7.186	12.711	15.615	17.331	18.359	18.596	17.807	16.242
75000	3.553	7.112	12.646	15.575	17.315	18.369	18.600	17.808	16.243
76000	3.516	7.040	12.582	15.535	17.300	18.377	18.604	17.809	16.244
77000	3.480	6.969	12.518	15.496	17.284	18.385	18.606	17.809	16.244
78000	3.445	6.901	12.455	15.458	17.268	18.393	18.608	17.809	16.244
79000	3.410	6.833	12.393	15.419	17.253	18.399	18.610	17.808	16.245
80000	3.377	6.768	12.331	15.381	17.238	18.405	18.610	17.807	16.245
81000	3.345	6.703	12.270	15.344	17.223	18.409	18.610	17.806	16.245
82000	3.313	6.641	12.209	15.306	17.208	18.413	18.610	17.804	16.245
83000	3.282	6.580	12.148	15.269	17.194	18.416	18.608	17.802	16.245
84000	3.252	6.520	12.089	15.233	17.179	18.418	18.606	17.799	16.244
85000	3.223	6.462	12.029	15.197	17.165	18.419	18.604	17.796	16.243
86000	3.195	6.406	11.971	15.161	17.151	18.420	18.601	17.793	16.241
87000	3.167	6.350	11.912	15.125	17.137	18.420	18.597	17.789	16.236
88000	3.140	6.296	11.854	15.089	17.123	18.419	18.593	17.785	16.233
89000	3.113	6.243	11.797	15.054	17.110	18.417	18.588	17.780	16.230
90000	3.087	6.192	11.740	15.019	17.096	18.414	18.583	17.775	16.228
91000	3.062	6.141	11.684	14.984	17.083	18.411	18.577	17.770	16.225
92000	3.037	6.092	11.628	14.950	17.070	18.407	18.570	17.765	16.223

	Angles								
Displ	**5.000^0**	**10.000^0**	**20.000^0**	**30.000^0**	**40.000^0**	**50.000^0**	**60.000^0**	**70.000^0**	**80.000^0**
93000	3.013	6.044	11.572	14.916	17.057	18.403	18.563	17.759	16.220
94000	2.989	5.997	11.515	14.882	17.044	18.398	18.556	17.753	16.217
95000	2.966	5.951	11.461	14.848	17.031	18.392	18.548	17.747	16.214
96000	2.944	5.905	11.407	14.815	17.019	18.385	18.540	17.741	16.211
97000	2.922	5.862	11.353	14.782	17.006	18.378	18.532	17.734	16.207
98000	2.900	5.819	11.299	14.749	16.994	18.371	18.523	17.727	16.204
99000	2.879	5.777	11.246	14.717	16.982	18.363	18.513	17.720	16.201
100000	2.858	5.735	11.194	14.685	16.970	18.354	18.504	17.713	16.197
101000	2.838	5.695	11.141	14.653	16.958	18.345	18.494	17.705	16.193
102000	2.818	5.656	11.090	14.621	16.946	18.335	18.484	17.697	16.189
103000	2.799	5.617	11.038	14.589	16.935	18.325	18.473	17.689	16.186
104000	2.780	5.580	10.987	14.558	16.923	18.314	18.462	17.681	16.182
105000	2.762	5.543	10.936	14.527	16.912	18.303	18.451	17.672	16.178
106000	2.744	5.506	10.886	14.496	16.901	18.292	18.440	17.663	16.174
107000	2.726	5.471	10.836	14.466	16.890	18.280	18.428	17.654	16.170
108000	2.708	5.436	10.787	14.435	16.878	18.268	18.416	17.645	16.166
109000	2.691	5.402	10.737	14.405	16.868	18.255	18.404	17.636	16.162
110000	2.675	5.369	10.688	14.375	16.857	18.242	18.391	17.627	16.157
111000	2.658	5.336	10.640	14.346	16.846	18.228	18.378	17.617	16.153
112000	2.642	5.304	10.592	14.316	16.835	18.214	18.365	17.607	16.148
113000	2.627	5.273	10.544	14.287	16.823	18.200	18.352	17.598	16.143
114000	2.611	5.243	10.496	14.258	16.812	18.185	18.339	17.588	16.139
115000	2.596	5.213	10.449	14.229	16.801	18.170	18.325	17.578	16.134
116000	2.581	5.183	10.402	14.200	16.789	18.155	18.311	17.568	16.129
117000	2.567	5.154	10.356	14.171	16.777	18.140	18.297	17.557	16.124
118000	2.553	5.126	10.310	14.143	16.764	18.124	18.283	17.547	16.119
119000	2.539	5.098	10.264	14.115	16.752	18.108	18.269	17.537	16.114
120000	2.525	5.071	10.218	14.087	16.739	18.092	18.254	17.526	16.109
121000	2.512	5.044	10.173	14.059	16.725	18.075	18.239	17.516	16.104
122000	2.499	5.017	10.128	14.032	16.711	18.058	18.224	17.505	16.098
123000	2.486	4.992	10.084	14.004	16.697	18.041	18.209	17.495	16.093
124000	2.473	4.966	10.039	13.977	16.682	18.024	18.193	17.484	16.087
125000	2.461	4.942	9.995	13.951	16.667	18.006	18.178	17.473	16.082
126000	2.448	4.917	9.952	13.924	16.652	17.988	18.162	17.462	16.076
127000	2.436	4.893	9.909	13.897	16.637	17.970	18.146	17.451	16.071
128000	2.425	4.870	9.866	13.871	16.621	17.952	18.130	17.440	16.065
129000	2.413	4.847	9.824	13.845	16.605	17.934	18.113	17.429	16.059
130000	2.402	4.824	9.782	13.819	16.588	17.915	18.097	17.417	16.053
131000	2.391	4.802	9.741	13.793	16.571	17.896	18.080	17.406	16.047
132000	2.380	4.780	9.700	13.767	16.554	17.877	18.063	17.394	16.041
133000	2.369	4.759	9.660	13.742	16.537	17.858	18.047	17.383	16.035
134000	2.359	4.738	9.621	13.716	16.519	17.839	18.030	17.371	16.029
135000	2.349	4.717	9.582	13.691	16.501	17.819	18.013	17.360	16.023
136000	2.338	4.697	9.543	13.666	16.483	17.799	17.996	17.348	16.017
137000	2.328	4.677	9.505	13.641	16.464	17.779	17.978	17.336	16.011
138000	2.319	4.658	9.468	13.617	16.446	17.759	17.961	17.324	16.005
139000	2.309	4.639	9.431	13.592	16.427	17.739	17.944	17.312	15.999
140000	2.300	4.620	9.395	13.568	16.407	17.719	17.926	17.300	15.993
141000	2.291	4.601	9.359	13.544	16.388	17.698	17.908	17.287	15.987
142000	2.282	4.583	9.324	13.520	16.368	17.677	17.890	17.275	15.981
143000	2.273	4.565	9.289	13.496	16.348	17.656	17.873	17.263	15.974
144000	2.264	4.548	9.254	13.472	16.328	17.635	17.855	17.250	15.968
145000	2.255	4.531	9.221	13.448	16.308	17.614	17.836	17.238	15.962

	Angles								
Displ	**5.000^0**	**10.000^0**	**20.000^0**	**30.000^0**	**40.000^0**	**50.000^0**	**60.000^0**	**70.000^0**	**80.000^0**
146000	2.247	4.514	9.187	13.425	16.287	17.593	17.818	17.225	15.956
147000	2.239	4.497	9.155	13.402	16.266	17.571	17.800	17.212	15.950
148000	2.231	4.481	9.122	13.378	16.245	17.550	17.782	17.200	15.943
149000	2.223	4.465	9.090	13.356	16.224	17.528	17.763	17.187	15.937
150000	2.215	4.449	9.059	13.333	16.203	17.506	17.745	17.174	15.931
151000	2.207	4.434	9.028	13.310	16.181	17.484	17.726	17.161	15.924
152000	2.199	4.419	8.998	13.287	16.159	17.462	17.707	17.148	15.918
153000	2.192	4.404	8.968	13.265	16.137	17.439	17.689	17.135	15.911
154000	2.185	4.389	8.938	13.243	16.115	17.417	17.670	17.122	15.905
155000	2.178	4.375	8.909	13.221	16.092	17.394	17.651	17.108	15.898
156000	2.171	4.361	8.881	13.199	16.070	17.372	17.632	17.095	15.892
157000	2.164	4.347	8.853	13.177	16.047	17.349	17.613	17.081	15.885
158000	2.157	4.333	8.825	13.155	16.024	17.326	17.594	17.068	15.878
159000	2.150	4.320	8.798	13.133	16.001	17.303	17.575	17.054	15.872
160000	2.144	4.306	8.771	13.112	15.978	17.280	17.556	17.041	15.865
161000	2.137	4.294	8.745	13.091	15.954	17.257	17.537	17.027	15.858
162000	2.131	4.281	8.719	13.069	15.931	17.234	17.518	17.013	15.851
163000	2.125	4.268	8.694	13.048	15.907	17.211	17.498	17.000	15.844
164000	2.119	4.256	8.669	13.027	15.883	17.188	17.479	16.986	15.837
165000	2.113	4.244	8.644	13.006	15.860	17.164	17.460	16.972	15.830
166000	2.107	4.232	8.620	12.986	15.835	17.141	17.440	16.958	15.822
167000	2.101	4.221	8.596	12.965	15.811	17.117	17.420	16.944	15.815
168000	2.095	4.209	8.573	12.944	15.787	17.094	17.401	16.930	15.808
169000	2.090	4.198	8.550	12.924	15.762	17.070	17.381	16.915	15.800
170000	2.084	4.187	8.528	12.903	15.738	17.046	17.362	16.901	15.793
171000	2.079	4.176	8.505	12.882	15.713	17.022	17.342	16.887	15.785
172000	2.074	4.165	8.484	12.862	15.688	16.998	17.322	16.872	15.778
173000	2.069	4.155	8.462	12.841	15.663	16.974	17.302	16.858	15.770
174000	2.063	4.145	8.441	12.820	15.638	16.950	17.282	16.844	15.762
175000	2.058	4.135	8.421	12.799	15.613	16.926	17.262	16.829	15.755
176000	2.054	4.125	8.400	12.778	15.587	16.902	17.241	16.814	15.747
177000	2.049	4.115	8.380	12.757	15.562	16.878	17.221	16.800	15.739
178000	2.044	4.105	8.361	12.736	15.536	16.853	17.201	16.785	15.731
179000	2.039	4.096	8.341	12.714	15.511	16.829	17.181	16.770	15.724
180000	2.035	4.087	8.322	12.693	15.485	16.805	17.160	16.756	15.716
181000	2.030	4.078	8.304	12.671	15.459	16.780	17.140	16.741	15.708
182000	2.026	4.069	8.285	12.649	15.433	16.756	17.120	16.726	15.700
183000	2.022	4.060	8.267	12.627	15.407	16.731	17.099	16.711	15.692
184000	2.017	4.051	8.250	12.605	15.381	16.707	17.079	16.696	15.684
185000	2.013	4.043	8.232	12.583	15.355	16.681	17.058	16.681	15.676
186000	2.009	4.035	8.215	12.560	15.328	16.657	17.037	16.666	15.668
187000	2.005	4.027	8.199	12.538	15.302	16.632	17.016	16.651	15.660
188000	2.001	4.019	8.182	12.515	15.275	16.607	16.995	16.636	15.651
189000	1.997	4.011	8.166	12.492	15.249	16.582	16.974	16.621	15.643
190000	1.994	4.003	8.150	12.469	15.222	16.557	16.953	16.606	15.635
191000	1.990	3.996	8.134	12.446	15.195	16.532	16.932	16.591	15.627
192000	1.986	3.988	8.119	12.423	15.168	16.507	16.911	16.576	15.619
193000	1.983	3.981	8.104	12.399	15.141	16.482	16.890	16.560	15.611
194000	1.979	3.974	8.089	12.376	15.114	16.457	16.869	16.545	15.602
195000	1.976	3.967	8.075	12.353	15.087	16.431	16.848	16.530	15.594
196000	1.972	3.960	8.060	12.329	15.060	16.406	16.827	16.514	15.586
197000	1.969	3.953	8.046	12.305	15.033	16.381	16.806	16.499	15.578
198000	1.966	3.947	8.033	12.281	15.005	16.356	16.784	16.484	15.569

	Angles								
Displ	**5.000^0**	**10.000^0**	**20.000^0**	**30.000^0**	**40.000^0**	**50.000^0**	**60.000^0**	**70.000^0**	**80.000^0**
199000	1.963	3.940	8.019	12.257	14.978	16.331	16.763	16.468	15.561
200000	1.959	3.934	8.006	12.233	14.951	16.305	16.742	16.453	15.553
201000	1.956	3.928	7.993	12.208	14.923	16.280	16.720	16.437	15.544
202000	1.953	3.922	7.980	12.184	14.896	16.254	16.699	16.422	15.536
203000	1.950	3.916	7.968	12.159	14.868	16.229	16.677	16.406	15.527
204000	1.948	3.910	7.955	12.134	14.840	16.203	16.656	16.390	15.519
205000	1.945	3.904	7.943	12.110	14.812	16.178	16.634	16.375	15.510
206000	1.942	3.899	7.931	12.085	14.785	16.152	16.613	16.359	15.502
207000	1.939	3.893	7.920	12.060	14.757	16.127	16.591	16.343	15.493
208000	1.937	3.888	7.908	12.035	14.729	16.101	16.569	16.327	15.485
209000	1.934	3.883	7.897	12.010	14.701	16.075	16.548	16.312	15.477
210000	1.931	3.877	7.886	11.985	14.673	16.049	16.526	16.296	15.468
211000	1.929	3.872	7.876	11.960	14.645	16.023	16.504	16.280	15.460
212000	1.926	3.867	7.865	11.935	14.616	15.996	16.483	16.264	15.451
213000	1.924	3.862	7.855	11.910	14.588	15.970	16.461	16.249	15.443
214000	1.922	3.858	7.845	11.885	14.560	15.944	16.439	16.233	15.435
215000	1.919	3.853	7.835	11.860	14.531	15.918	16.417	16.217	15.426
216000	1.917	3.849	7.825	11.835	14.503	15.892	16.395	16.201	15.418
217000	1.915	3.844	7.815	11.810	14.475	15.866	16.373	16.185	15.409
218000	1.913	3.840	7.806	11.785	14.446	15.839	16.351	16.170	15.401
219000	1.911	3.836	7.797	11.760	14.418	15.813	16.329	16.154	15.392
220000	1.909	3.831	7.788	11.735	14.389	15.787	16.307	16.138	15.384
221000	1.907	3.827	7.779	11.710	14.361	15.760	16.285	16.122	15.375
222000	1.905	3.823	7.770	11.685	14.332	15.733	16.263	16.106	15.366
223000	1.903	3.819	7.762	11.660	14.303	15.706	16.241	16.090	15.358
224000	1.901	3.816	7.754	11.635	14.274	15.680	16.219	16.075	15.349
225000	1.899	3.812	7.746	11.610	14.246	15.653	16.197	16.059	15.341
226000	1.898	3.808	7.738	11.585	14.217	15.627	16.175	16.043	15.332
227000	1.896	3.805	7.730	11.561	14.188	15.600	16.153	16.027	15.324
228000	1.894	3.801	7.723	11.536	14.159	15.573	16.131	16.011	15.315
229000	1.892	3.798	7.715	11.511	14.129	15.546	16.109	15.996	15.307
230000	1.891	3.795	7.708	11.487	14.100	15.520	16.087	15.980	15.298
231000	1.889	3.792	7.701	11.462	14.071	15.493	16.064	15.964	15.290
232000	1.888	3.789	7.694	11.437	14.042	15.466	16.042	15.948	15.281
233000	1.886	3.785	7.687	11.413	14.012	15.439	16.020	15.933	15.273
234000	1.885	3.783	7.681	11.389	13.983	15.412	15.998	15.917	15.264
235000	1.883	3.780	7.674	11.364	13.954	15.385	15.976	15.901	15.256
236000	1.882	3.777	7.668	11.340	13.925	15.358	15.953	15.885	15.248
237000	1.881	3.774	7.662	11.316	13.895	15.331	15.931	15.870	15.239
238000	1.879	3.771	7.656	11.291	13.866	15.304	15.909	15.854	15.231
239000	1.878	3.769	7.650	11.267	13.836	15.277	15.887	15.838	15.222
240000	1.877	3.766	7.644	11.243	13.807	15.249	15.864	15.823	15.214
241000	1.876	3.764	7.639	11.219	13.777	15.222	15.842	15.807	15.206
242000	1.875	3.762	7.633	11.195	13.747	15.195	15.820	15.791	15.198
243000	1.874	3.759	7.628	11.171	13.718	15.168	15.797	15.775	15.189
244000	1.872	3.757	7.623	11.147	13.688	15.140	15.775	15.760	15.181
245000	1.871	3.755	7.618	11.124	13.658	15.113	15.753	15.744	15.173
246000	1.870	3.753	7.613	11.100	13.628	15.085	15.731	15.728	15.165
247000	1.869	3.751	7.608	11.077	13.598	15.058	15.708	15.713	15.157
248000	1.868	3.749	7.603	11.053	13.568	15.030	15.686	15.697	15.149
249000	1.868	3.747	7.598	11.030	13.538	15.003	15.663	15.682	15.141
250000	1.867	3.745	7.594	11.006	13.508	14.975	15.641	15.666	15.133
251000	1.866	3.743	7.589	10.983	13.478	14.948	15.619	15.650	15.125

	Angles								
Displ	**5.000^0**	**10.000^0**	**20.000^0**	**30.000^0**	**40.000^0**	**50.000^0**	**60.000^0**	**70.000^0**	**80.000^0**
252000	1.865	3.741	7.584	10.960	13.448	14.920	15.596	15.635	15.117
253000	1.864	3.740	7.580	10.937	13.419	14.892	15.574	15.619	15.109
254000	1.863	3.738	7.575	10.913	13.389	14.865	15.552	15.603	15.101
255000	1.863	3.737	7.570	10.890	13.359	14.837	15.529	15.588	15.093
256000	1.862	3.735	7.565	10.868	13.328	14.809	15.507	15.572	15.085
257000	1.861	3.734	7.560	10.845	13.299	14.781	15.485	15.557	15.077
258000	1.861	3.732	7.554	10.822	13.268	14.754	15.462	15.541	15.069
259000	1.860	3.731	7.549	10.799	13.238	14.726	15.440	15.526	15.061
260000	1.859	3.730	7.544	10.776	13.208	14.698	15.417	15.510	15.053
261000	1.859	3.728	7.538	10.754	13.177	14.670	15.395	15.494	15.045
262000	1.858	3.727	7.532	10.731	13.146	14.642	15.372	15.479	15.038
263000	1.858	3.726	7.526	10.708	13.116	14.614	15.350	15.463	15.030
264000	1.857	3.725	7.520	10.686	13.085	14.586	15.327	15.448	15.022
265000	1.857	3.724	7.514	10.663	13.055	14.558	15.305	15.432	15.014
266000	1.856	3.723	7.508	10.641	13.024	14.530	15.282	15.417	15.006
267000	1.856	3.722	7.501	10.619	12.993	14.502	15.260	15.401	14.998
268000	1.856	3.721	7.495	10.596	12.963	14.474	15.237	15.385	14.990
269000	1.855	3.721	7.488	10.574	12.932	14.446	15.215	15.370	14.982
270000	1.855	3.720	7.481	10.552	12.900	14.418	15.192	15.354	14.974
271000	1.855	3.719	7.475	10.529	12.870	14.390	15.170	15.339	14.966
272000	1.854	3.719	7.467	10.507	12.839	14.362	15.147	15.323	14.958
273000	1.854	3.718	7.460	10.485	12.808	14.334	15.125	15.307	14.951
274000	1.854	3.717	7.453	10.463	12.777	14.305	15.102	15.292	14.943
275000	1.854	3.717	7.445	10.441	12.747	14.277	15.079	15.276	14.935
276000	1.853	3.716	7.438	10.419	12.716	14.249	15.057	15.261	14.927
277000	1.853	3.716	7.430	10.397	12.685	14.221	15.034	15.245	14.919
278000	1.853	3.716	7.422	10.375	12.654	14.192	15.012	15.229	14.911
279000	1.853	3.715	7.415	10.353	12.624	14.164	14.989	15.214	14.903
280000	1.853	3.715	7.406	10.331	12.593	14.136	14.966	15.199	14.895
281000	1.853	3.715	7.398	10.309	12.563	14.107	14.944	15.183	14.887
282000	1.853	3.715	7.390	10.287	12.532	14.079	14.921	15.167	14.879
283000	1.853	3.714	7.382	10.265	12.501	14.051	14.899	15.151	14.872
284000	1.853	3.714	7.373	10.244	12.471	14.022	14.876	15.136	14.864
285000	1.853	3.714	7.364	10.222	12.440	13.994	14.853	15.120	14.856
286000	1.853	3.714	7.355	10.200	12.410	13.965	14.831	15.104	14.848
287000	1.853	3.714	7.346	10.178	12.380	13.937	14.808	15.089	14.840
288000	1.853	3.714	7.337	10.157	12.350	13.909	14.785	15.073	14.832
289000	1.853	3.714	7.328	10.135	12.319	13.880	14.763	15.057	14.824
290000	1.853	3.714	7.318	10.113	12.289	13.852	14.740	15.041	14.816
291000	1.853	3.714	7.309	10.091	12.259	13.823	14.717	15.026	14.808
292000	1.853	3.715	7.299	10.070	12.229	13.794	14.694	15.010	14.800
293000	1.853	3.715	7.289	10.048	12.199	13.766	14.671	14.994	14.792
294000	1.853	3.715	7.280	10.026	12.169	13.737	14.649	14.978	14.784
295000	1.854	3.715	7.270	10.004	12.140	13.709	14.626	14.963	14.776
295900	1.854	3.716	7.260	9.985	12.113	13.683	14.605	14.949	14.769
296000	1.854	3.716	7.259	9.982	12.110	13.680	14.603	14.947	14.768
297000	1.854	3.716	7.249	9.961	12.080	13.651	14.580	14.931	14.760
298000	1.854	3.717	7.238	9.939	12.051	13.623	14.557	14.915	14.753
299000	1.854	3.717	7.228	9.917	12.022	13.594	14.534	14.899	14.744
300000	1.855	3.717	7.217	9.895	11.992	13.565	14.511	14.883	14.736
301000	1.855	3.718	7.206	9.873	11.963	13.537	14.488	14.868	14.729
302000	1.855	3.718	7.195	9.851	11.934	13.508	14.465	14.852	14.721
303000	1.856	3.719	7.184	9.830	11.905	13.479	14.443	14.836	14.713

	Angles								
Displ	**5.000^0**	**10.000^0**	**20.000^0**	**30.000^0**	**40.000^0**	**50.000^0**	**60.000^0**	**70.000^0**	**80.000^0**
304000	1.856	3.720	7.173	9.808	11.877	13.450	14.420	14.820	14.705
305000	1.856	3.720	7.162	9.786	11.848	13.422	14.397	14.804	14.697
306000	1.857	3.721	7.150	9.764	11.819	13.393	14.374	14.789	14.689
307000	1.857	3.722	7.139	9.742	11.791	13.364	14.351	14.773	14.681
308000	1.857	3.722	7.127	9.720	11.762	13.335	14.327	14.757	14.673
309000	1.858	3.723	7.115	9.698	11.734	13.307	14.304	14.741	14.665
310000	1.858	3.724	7.103	9.676	11.705	13.278	14.281	14.725	14.657
311000	1.859	3.725	7.091	9.653	11.677	13.249	14.258	14.709	14.649
312000	1.859	3.726	7.079	9.631	11.649	13.220	14.235	14.693	14.641
313000	1.860	3.727	7.066	9.609	11.621	13.191	14.212	14.677	14.633
314000	1.860	3.727	7.054	9.587	11.593	13.162	14.189	14.661	14.625
315000	1.861	3.728	7.041	9.565	11.565	13.134	14.166	14.645	14.617

7.3. Example of the use of Cross Curves Tables

The purpose of this section is to enable the plotting of the stability curves for any loading condition of the ship.
For example, taken into account that the ship's displacement is 300000 t and the vertical center of gravity corrected for the free surface is 14.00 m above base line. The righting arm will be:

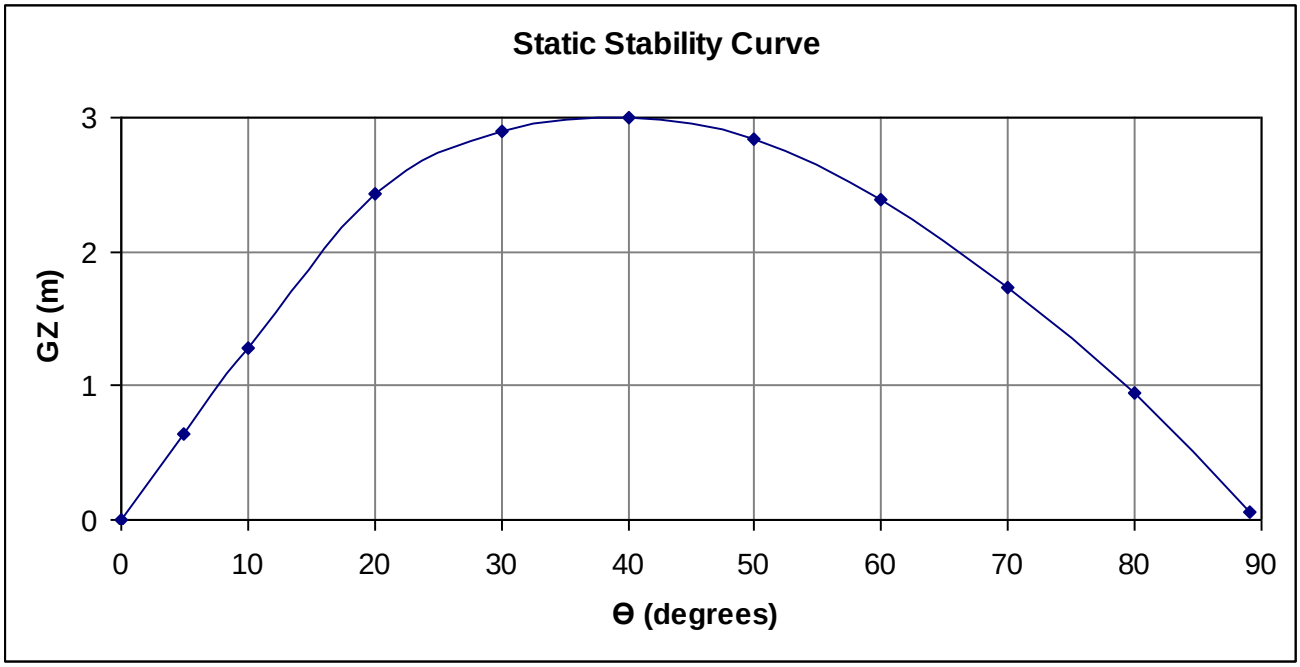
$$GZ = KN - KGo.\sin(\theta)$$

Where: KN = Cross curve ordinate
KGo = Vertical position of the gravity center of the condition corrected for the free surface effect
θ = Inclination angle

Note: Use of this method may produce a more onerous GZ curve thancalculated for the loading conditions shown in this book.

KN (m)	θ (degrees)	sin(θ)	KGo.sin (θ)	GZ (m)
1.855	5	0.0872	1.220	0.635
3.717	10	0.1736	2.431	1.286
7.217	20	0.3420	4.788	2.429
9.895	30	0.5000	7.000	2.895
11.992	40	0.6428	8.999	2.993
13.565	50	0.7660	10.725	2.840
14.511	60	0.8660	12.124	2.387
14.883	70	0.9397	13.156	1.727
14.736	80	0.9848	13.787	0.949
14.050	89	0.9998	13.998	0.052

Using the values of GZ of the last column, the curve of the ship's static stability, in the considered displacement, can be plotted:



7.4. Flooding Angles

The table below presents the flooding angles as function of the vessel displacement:

Displacement (ton)	Flooding Angle (degrees)	Displacement (ton)	Flooding Angle (degrees)	Displacement (ton)	Flooding Angle (degrees)
53000	89.610s	95000	72.357s	137000	59.332s
54000	89.156s	96000	71.994s	138000	59.082s
55000	88.703s	97000	71.632s	139000	58.833s
56000	88.253s	98000	71.273s	140000	58.544s
57000	87.805s	99000	70.914s	141000	58.293s
58000	87.356s	100000	70.558s	142000	58.043s
59000	86.909s	101000	70.204s	143000	57.795s
60000	86.469s	102000	69.855s	144000	57.548s
61000	86.028s	103000	69.513s	145000	57.303s
62000	85.589s	104000	69.175s	146000	57.062s
63000	85.152s	105000	68.839s	147000	56.819s
64000	84.716s	106000	68.506s	148000	56.577s
65000	84.287s	107000	68.175s	149000	56.337s
66000	83.855s	108000	67.846s	150000	56.098s
67000	83.422s	109000	67.520s	151000	55.861s
68000	82.996s	110000	67.196s	152000	55.624s
69000	82.568s	111000	66.875s	153000	55.389s
70000	82.144s	112000	66.556s	154000	55.155s
71000	81.720s	113000	66.198s	155000	54.922s
72000	81.298s	114000	65.881s	156000	54.722s
73000	80.878s	115000	65.567s	157000	54.487s
74000	80.460s	116000	65.257s	158000	54.251s
75000	80.039s	117000	64.950s	159000	54.017s
76000	79.636s	118000	64.645s	160000	53.783s
77000	79.230s	119000	64.342s	161000	53.550s
78000	78.829s	120000	64.042s	162000	53.317s
79000	78.430s	121000	63.745s	163000	53.085s
80000	78.033s	122000	63.450s	164000	52.854s
81000	77.641s	123000	63.195s	165000	52.623s
82000	77.248s	124000	62.904s	166000	52.428s
83000	76.856s	125000	62.614s	167000	52.208s
84000	76.469s	126000	62.327s	168000	51.988s
85000	76.085s	127000	62.041s	169000	51.769s
86000	75.703s	128000	61.759s	170000	51.552s
87000	75.323s	129000	61.474s	171000	51.336s
88000	74.945s	130000	61.195s	172000	51.120s
89000	74.569s	131000	60.918s	173000	50.906s
90000	74.196s	132000	60.642s	174000	50.692s
91000	73.824s	133000	60.368s	175000	50.479s
92000	73.455s	134000	60.098s	176000	50.266s
93000	73.088s	135000	59.837s	177000	50.055s
94000	72.722s	136000	59.584s	178000	49.845s

Displacement (ton)	Flooding Angle (degrees)
179000	49.635s
180000	49.426s
181000	49.218s
182000	49.011s
183000	48.804s
184000	48.599s
185000	48.395s
186000	48.191s
187000	47.992s
188000	47.790s
189000	47.589s
190000	47.389s
191000	47.190s
192000	46.991s
193000	46.792s
194000	46.595s
195000	46.399s
196000	46.206s
197000	46.011s
198000	45.817s
199000	45.624s
200000	45.432s
201000	45.241s
202000	45.050s
203000	44.860s
204000	44.671s
205000	44.482s
206000	44.295s
207000	44.107s
208000	43.921s
209000	43.736s
210000	43.550s
211000	43.366s
212000	43.183s
213000	43.000s
214000	42.818s
215000	42.636s
216000	42.456s
217000	42.276s
218000	42.096s
219000	41.918s
220000	41.740s
221000	41.562s
222000	41.385s
223000	41.208s
224000	41.033s

Displacement (ton)	Flooding Angle (degrees)
225000	40.858s
226000	40.685s
227000	40.511s
228000	40.338s
229000	40.165s
230000	39.993s
231000	39.822s
232000	39.621s
233000	39.480s
234000	39.311s
235000	39.142s
236000	38.974s
237000	38.806s
238000	38.639s
239000	38.473s
240000	38.306s
241000	38.113s
242000	37.948s
243000	37.783s
244000	37.619s
245000	37.456s
246000	37.293s
247000	37.131s
248000	36.969s
249000	36.835s
250000	36.647s
251000	36.487s
252000	36.346s
253000	36.183s
254000	36.019s
255000	35.860s
256000	35.696s
257000	35.531s
258000	35.367s
259000	35.201s
260000	35.035s
261000	34.902s
262000	34.743s
263000	34.584s
264000	34.425s
265000	34.266s
266000	34.104s
267000	33.944s
268000	33.784s
269000	33.624s
270000	33.462s

Displacement (ton)	Flooding Angle (degrees)
271000	33.301s
272000	33.139s
273000	32.977s
274000	32.815s
275000	32.653s
276000	32.490s
277000	32.327s
278000	32.163s
279000	31.999s
280000	31.835s
281000	31.670s
282000	31.505s
283000	31.340s
284000	31.174s
285000	31.008s
286000	30.841s
287000	30.674s
288000	30.507s
289000	30.340s
290000	30.172s
291000	30.003s
292000	29.834s
293000	29.665s
294000	29.496s
295000	29.326s
296000	29.156s
297000	28.986s
298000	28.815s
299000	28.644s
300000	28.472s
301000	28.300s
302000	28.128s
303000	27.955s
304000	27.783s
305000	27.609s
306000	27.436s
307000	27.262s
308000	27.088s
309000	26.913s
310000	26.738s
311000	26.563s
312000	26.387s
313000	26.211s
314000	26.035s

8. LIGHT WEIGHT

8.1. Light Weight Distribution

Weight (ton)	LCG (m)	TCG (m)	VCG (m)	Fwd Boundary (m)	Aft Boundary (m)
5467.0	134.00	0.18p	15.90	104.96	173.07
23290.0	1.87	0.18p	15.90	-101.22	104.96
5100.0	-132.00	0.18p	15.90	-171.19	-101.22
300.0	160.27	0.18p	15.90	154.22	172.52
1650.0	-5.77	0.18p	15.90	-146.04	120.78
50.0	-155.33	0.18p	15.90	-167.18	-146.04
310.0	116.33	0.18p	15.90	111.26	120.78
860.0	127.86	0.18p	15.90	120.78	135.98
170.0	145.86	0.18p	15.90	139.02	152.70
500.0	137.50	0.18p	15.90	120.78	154.22
860.0	127.86	0.18p	15.90	120.78	135.98
170.0	145.86	0.18p	15.90	139.02	152.70
91.8	82.71	0.18p	15.90	80.32	85.08
91.1	44.63	0.18p	15.90	42.24	47.00
84.9	-107.69	0.18p	15.90	-110.08	-105.32
1486.2	-138.72	0.18p	15.90	-143.63	-133.98
81.3	153.09	0.18p	15.90	143.58	166.42
179.6	51.66	0.18p	15.90	-107.70	151.94
-94.7	46.19	4.15p	31.68	-88.89	149.00
1491.7	5.98	3.14s	32.07	-98.20	149.60
275.7	-10.48	13.66p	34.92	-24.29	4.08
278.9	-10.54	12.40s	34.92	-24.29	4.08
251.3	-35.48	14.20p	34.42	-48.09	-24.51
257.7	-35.68	14.17s	34.39	-48.09	-24.51
469.1	-107.39	13.84s	37.56	-123.09	-94.69
628.3	19.83	14.78s	38.67	4.25	33.83
260.7	-14.46	3.78s	35.36	-93.40	115.90
4.3	128.34	0.40s	39.73	125.00	149.00
885.1	-1.54	7.25s	37.342	-121.90	154.20

8.2. Others

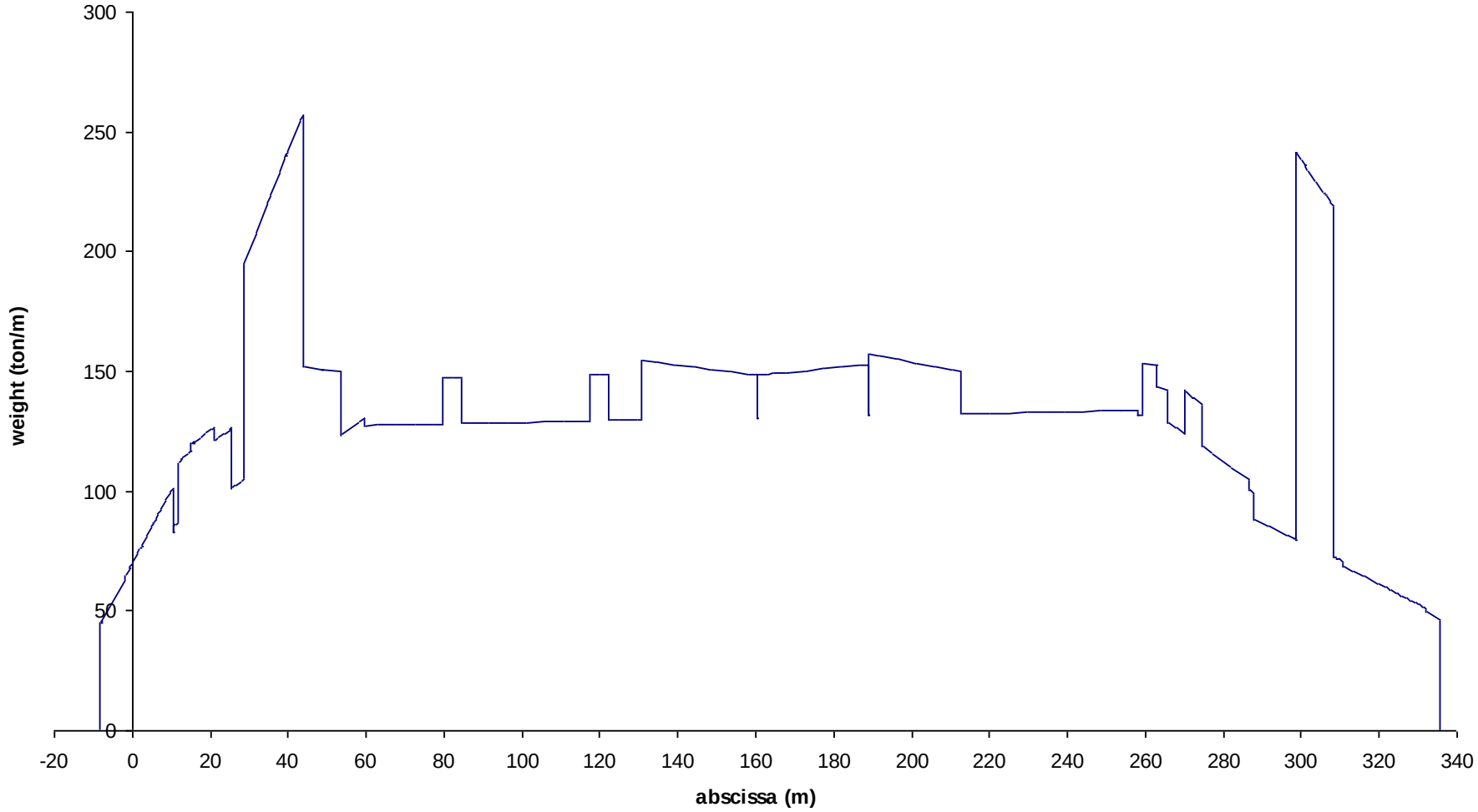
The weight, fwd and aft boundaries, LCG, TCG and VCG for the terms Constant, Mooring, Risers, Plant liquids and Provisions is presented in table bellow.

Items	Fwd boundary	Aft boundary	LCG	VCG	TCG
Constant	-164.592	154.222	121.170	27.220	0.310s
Mooring	-143.829	-133.279	-138.554	-2.570	0.000
Plant liquid	-102.000	140.542	-10.784	34.000	4.942s
Provision	126.862	135.982	131.422	29.100	7.400p
Risers	-143.829	-133.279	-138.554	-2.570	0.000

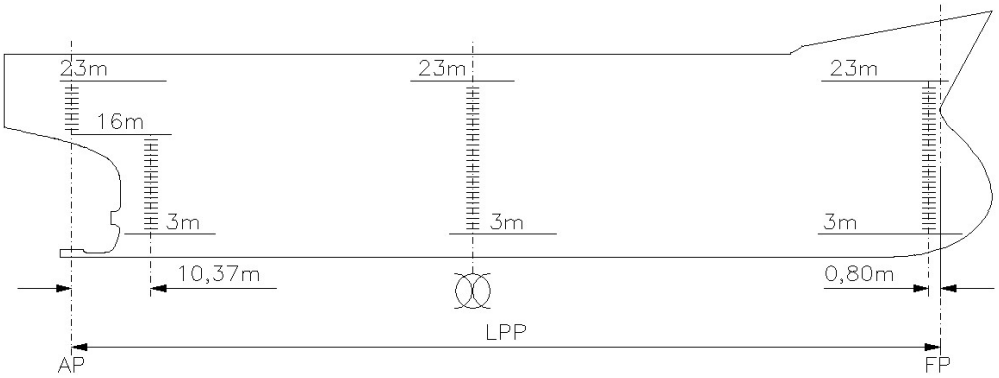
Notes:
The origin of coordinates is in the Midship (M.S.), at base line level and at center line.

- The X-axis is the longitudinal direction being negative forward and positive after the Midship.
- The Y-axis is the transversal position being positive for portside (p) and negative for starboard (s).
- The Z-axis is the vertical axis and positive above base line.

8.3 Light Weight Curve



9. DRAFT MARKS



9.1. Draft Correction Methodology

The Correction of the draughts read on the draught marks for the perpendiculars can be made by the following procedure:

Longitudinal Distance:

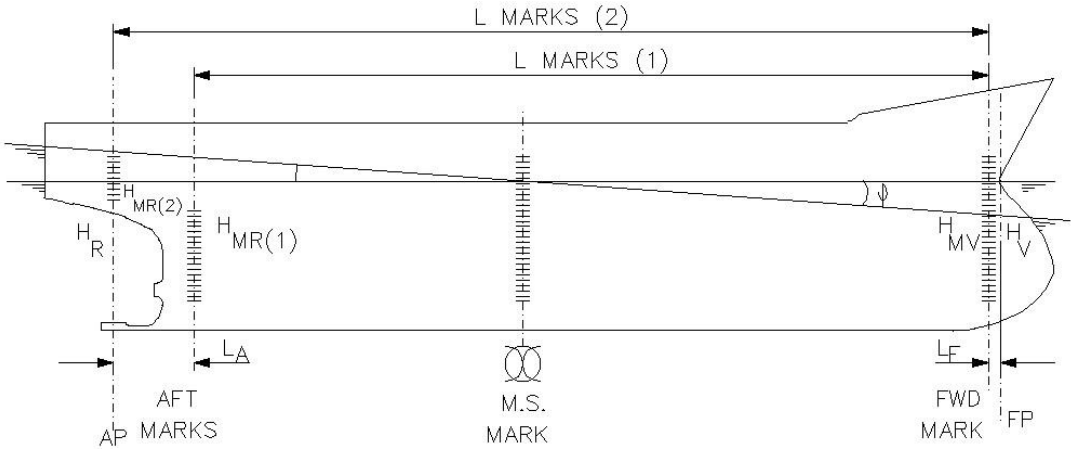
L_{MARKS} : Distance between the centerlines of the draught marks
L_A : Distance between the aft perpendicular and the centerline of the aft. draught mark
L_F : Distance between the fwd perpendicular and the centerline of the fwd. draught mark

Draft:

H_R : Aft perpendicular draught
H_V : Fwd Perpendicular draught
H_{MR} : Draught on the aft. Mark
H_{MV} : Draught on the fwd. Mark

Correction:

δH_R : Aft draught correction
δH_V Fwd draught correction



Relations:

I - Trim between marks: $t = H_{MR} - H_{MV}$

II - Aft draught correction: $\delta H_R = L_A \times tg\ \varphi$ $\therefore$ $tg\ \varphi = t / L_{MARKS}$

III - Fwd draught correction: $\delta H_V = L_F \times tg\ \varphi$ $\therefore$ $tg\ \varphi = t / L_{MARKS}$

IV - Aft perpendicular draught: $H_R = H_{MR} + \delta H_R$

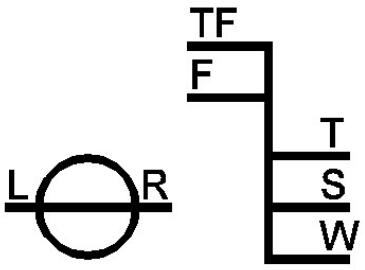
V - Fwd perpendicular draught: $H_V = H_{MV} - \delta H_V$

Convention:

Stern Trim: Fwd correction is subtractive
Aft correction is additive

Bow Trim: Fwd correction is additive
Aft correction is subtractive

10. FREEBOARD MARK



FREEBOARD	MOULDED DRAFT (m)
TROPICAL FRESH–TF	21.659
FRESH WATER–F	21.227
TROPICAL–T	21.167
SUMMER–S	20.735
WINTER–W	20.303

11. TRIM AND STABILITY CALCULATION

This Trim and Stability Booklet presents a global view of the FPSO normal operation sequences to be adopted during the loading and offloading of the Unit.

The normal offloading sequence considers a discharge of 135000 m^3 of oil during 24 hours. At the same time it is considered a continuous production of 24000 m^3 in 24 hours. It was assumed that the production will be received by one central tank that will not be offloaded to facilitate the mass balance during the operation.

The normal loading sequence considers a continuous production rate of 1000 m^3 / hour. The most common operations for the FPSO covers a range of 135000 m^3 of cargo, represented by loading conditions from 27% to 80%. Both maximum and minimum load conditions are considered as extreme operational conditions.

Cargo tanks 2A BB/BE and 4 BB/BE are prepared to work as separation tanks during the process of the oil. Due to the nature of the FPSO operation, one pair of separation tanks and slop tanks are considered with a constant filling on the normal loading conditions, but with different filling levels are being adopted on extreme operational conditions.

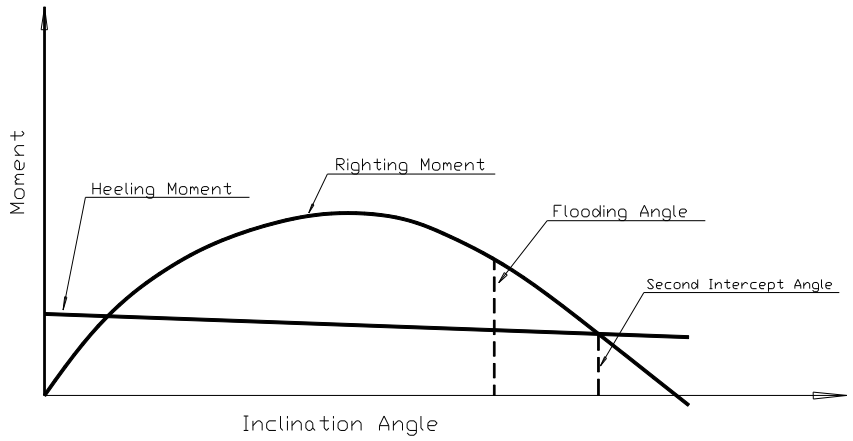
The values for weight and center of gravity of the constants used at the stability calculation were extracted from the document I-MC-3010.56-9310-941-XJM-026- Constants Calculation.

The Unit intact stability was verified in accordance with the Mobile Offshore Drilling Unit (MODU-1989) criteria.

Stability Criteria:

The stability of unit in each mode of operation should meet the following criteria established by the Mobile Offshore Drilling Unit (MODU-1989) criteria:

The righting and wind heeling moment curves should be prepared for the criterion analysis.



The righting and wind heeling moment curves should be drawn for wind forces calculation by the following formula:

$F = 0.5\ C_S\ C_H\ \rho\ V^2\ A$ (N)

Where:

F = wind force (N);
C_S = shape coefficient;
C_H = height coefficient;
ρ = Air density (1.222 kg/m^3);
V = wind velocity (m/s);
A = projected area of all exposed surfaces (m^2).

In general a minimum wind velocity of 36 m/s (70 knots) for offshore service should be used for normal operating conditions and a minimum wind velocity of 51,5 m/s (100 knots) should be used for the severe storm conditions.

NOTE: This analysis of stability has been calculated assuming a severe storm wind speed of 100 knots in all conditions.

Table for values of C_S used at the stability calculation:

Shape	C_S
Spherical	0.4
Cylindrical	0.5
Large flat surface (hull, deckhouse, smooth under-deck areas)	1.0
Drilling derrick	1.25
Wires	1.2
Exposed beams and girders under deck	1.3
Small parts	1.4
Isolated shapes (crane, beam, etc.)	1.5
Clustered deckhouses or similar structures	1.1

Table for values C_H used at the stability calculation:

Height above sea level (meters)	C_H
0 - 15.3	1.00
15.3 - 30.5	1.10
30.5 - 46.0	1.20
46.0 - 61.0	1.30
61.0 - 76.0	1.37
76.0 - 91.5	1.43
91.5 - 106.5	1.48
106.5 - 122.0	1.52
122.0 - 137.0	1.56
137.0 - 152.5	1.60
152.5 - 167.5	1.63
167.5 - 183.0	1.67
183.0 - 198.0	1.70
198.0 - 213.5	1.72
213.5 - 228.5	1.75
228.5 - 244.0	1.77
244.0 - 256.0	1.79
above 256.0	1.80

The stability of the unit in each mode of operation should meet the following criteria:

- For surface units the area under the righting moment curve to the second intercept or downflooding angle, whichever is less, should be not less than 40% in excess of the area under the wind heeling moment curve to the same limiting angle.

- The righting moment curve should be positive over the entire range of angles from upright to the second intercept.

12. GENERAL NOTES

12.1. Reference Drawings

The following drawings shall be kept on board to be used as references in conjuction with the booklet:

- I-DE-3010.56-9310-942-XJM-301 - General Arrangement (PP747-NA-1D10-101) rev. C
- I-DE-3010.56-9310.942-XJM-302 - Capacities Plan (PP747-NA-1D10-102) rev. D

12.2. General Provisions Against Capsizing and Information for the Master

General precautions against capsizing

1. Compliance with the stability criteria does not ensure immunity against capsizing, regardless of the circumstances, or absolve the master from his responsibilities. Masters should therefore exercise prudence and good seamanship having regard to the season of the year, weather forecasts and the navigational zone and should take the appropriate action as to speed and course warranted by the prevailing circumstances.
2. Care should be taken the cargo allocated to the ship is capable of being stowed so that compliance with the criteria can be achieved. If necessary, the amount should be limited to the extent that ballast weight may be required.
3. Before a voyage commences, care should be taken to ensure that the cargo and sizeable pieces of equipment have been properly stowed or lashed so as to minimize the possibility of both longitudinal and lateral shifting, while at sea, under the effect of acceleration caused by rolling and pitching.
4. A ship, when engaged in towing operations, should posses an adequate reserve of stability to withstand the anticipated heeling moment arising from the tow line without endangering the towing ship. Deck cargo on board the towing ship should be so positioned as not to endanger the safe working of the crew on deck or impede the proper functioning of the towing equipment and be properly secured. Tow line arrangements should include towing springs and a method of quick release of the tow.
5. The number of partially filled or slack tanks should be kept to a minimum because of their adverse effect on stability.
6. The stability criteria set minimum values, but no maximum values are recommended. It is advisable to avoid excessive values of metacentric height, since these might lead to acceleration forces which could be prejudicial to the ship, its complement, its equipment and to safe carriage of the cargo. Slack tanks may, in exceptional cases, be used as a means of reducing excessive values of metacentric height. In such cases, due consideration should be given to sloshing effects.
7. Regard should be paid to the possible adverse effects on stability where certain bulk cargoes are carried. In this connection, attention should be paid to the IMO Code of Safe Practice for Solid Bulk Cargoes.

12.3. Coordinate System

The origin of coordinates is in the Midship (M.S.), at base line level and at center line.
The X-axis is the longitudinal direction being negative forward and positive after the Midship. The
Y-axis is the transversal position being positive for portside and negative for starboard. The Z-axis is the vertical axis and positive above base line.

12.4. Sign Convention for Trim

Trim by bow - Negative (f)
Trim by stern - Positive (a)

12.5. Correction Due to Specific Gravity

In case of ship operating in seawater of specific gravity (γ) other than 1.025 t/m^3, it is necessary to correct the displacement as indicated bellow, before the entrance in both "Hydrostatics Tables" and "Cross Curves".

$$\text{Displacement (to enter in the table)} = \frac{\text{Displacement} \times 1.025}{\gamma}$$

For determination of MTC, 2 corrections are necessary:
At first the correction mentioned above and then, the value of MTC obtained in "Hydrostatic Characteristics" must be corrected as indicated bellow.

$$\text{MTC} = \frac{\text{MTC (from table)} \times \gamma}{1.025}$$

12.6. Notes About Free Surface Effects

Considering a tank completely filled with liquid, no movement of the liquid is possible and the effect on the ship's stability is precisely the same as if the tank contained solid material.
Immediately after a quantity of liquid is withdrawn from the tank, the situation changes completely and the stability of the ship is adversely affected by what is known as the "Free Surfaces Effects".
This adverse effect on the stability is referred to as a "Loss in GM" or as a "Virtual Rise in KG" and is calculated as follows:

$$\text{Loss in GM due to free surface effect (GGo)} = \frac{\text{Inertia} \times \text{Specific gravity of liquid in tank.}}{\text{Displacement of ship}}$$

In the evaluation of the GM loss due to free surface effects, the following inertia moments should be taken in account:

1) The maximum moment of each consumable groups;
2) The moments of whichever tanks partially filled.

When a ballasting or deballasting operation occurs, it should be taken in account the largest inertia moment among the tanks used in the operation.
For symmetric tanks, both moments should be taken in account.

The values of the maximum inertia moment for each tank are given on capacity tables.

Example:

To calculate the value of GGo for the CARGO OIL Tank No.2C, the CARGO OIL specific gravity taken in account is 0.920 t/m^3 , the ship's displacement is 210000 t and the maximum inertia are:

$$\text{GGo} = \frac{47364 \times 0.920}{210000} = 0.207 \text{ m}$$

12.7. Notes About the Inertia Moment of the Tanks

The inertia moment of the tanks located in the cargo region can be estimated in accordance with the following formula:

$I = (L \times B^3)/12$

Where:

I= inertia moment of the tanks
L= length of the tanks
B= Breadth of the tanks

12.8. Mooring and Risers loads

Mooring and risers loads shall be obtained on the table bellow referred to the forward draft. For intermediate drafts linear interpolation shall be used.

Draft (m)	Mooring Load (kN)	Risers Load (kN)
7.00	4715.00	483.00
21.00	3655.00	446.00

The forward and after boundary to the mooring and risers distributed loads used in the calculations were respectively 143.8f and 133.3f, both in meters.

12.9. Displacement, Center of Gravity and Free Surface Correction Calculation Procedure

1. Define the weight to be placed in each compartment, and its respective “Lcg”, “Tcg”, “Vcg” and GGo.
2. Each item of column “Weight” is to be multiplied by its “Lcg” to obtain the “Longitudinal Moment”.
3. Each item of column “Weight” is to be multiplied by its “Tcg” to obtain the “Transversal Moment”.
4. Each item of column “Weight” is to be multiplied by its “Vcg” to obtain the “Vertical Moment”.
5. Values of columns “Weight”, “Longitudinal Moment”, “Transversal Moment”, “Vertical Moment” and GGo are then, summed.
6. Values of Lcg, Tcg, Vcg and GGo are obtained as follows:

Displacement: (Δ) = Total Weight

$$Lcg = \frac{\sum \text{Long. Mom.}}{\Delta} \qquad Tcg = \frac{\sum \text{Trans. Mom.}}{\Delta} \qquad Vcg = \frac{\sum \text{Vert. Mom.}}{\Delta}$$

$$GGo = \sum GGo \quad \text{or} \quad \frac{\sum I \times \gamma}{\Delta}$$

12.10. Trim and Metacentric Height Calculation Procedure

1. In the “Hydrostatics Tables”, with the value of Displacement (Δ), the following values are obtained: Correspondent Draft (LCF Draft), LCB, LCF, MTcm, and KMT.

2. Trim

$$T = \frac{\Delta \text{ x } (Lcg - LCB)}{MTC \text{ x } 100}$$

3. Draft on Aft Perpendicular

$$Hr = Hc + \frac{T}{Lpp} \text{ x } ({Lpp}/{2} - LCF)$$

4. Draft on Forward Perpendicular

$$Hv = Hc - \frac{T}{Lpp} \text{ x } ({Lpp}/{2} + LCF)$$

5. Initial Metacentric Height

GM = KMT - Vcg

6. Initial Metacentric Height corrected for Free Surface Effects

GMo = GM - GGo

7. Vertical Center of Gravity Corrected for Free Surface Effects

KGo = Vcg + Ggo

Stability Calculation Sheet

Tanks	Weight (t)	Lcg (m)	Long. Mom (t x m)	Vcg (m)	Vert. Mom (t x m)	Tcg (m)	Transv. Mom (t x m)	FSM (MT-m)
Storage Diesel Oil Tank N°1		141.41						
Storage Diesel Oil Tank N°2		137.88						
Diesel Oil Daily Tank		131.42						
Settling Tank N° 1		127.24						
Settling Tank N° 2		122.68						
L. O. Storage Tank		144.72						
Total - Diesel Oil and Lubricating Oil Tank								
Potable Water Tank PS		156.73						
Potable Water Tank SB		156.83						
Distilled Water Tank		147.76						
Total - Fresh Water Tank								
Sewage Tank		123.61						
Overflow Tank		123.61						
Bilge Tank		133.15						
Drain Tank		144.34						
Total - Miscellaneous Tank								
Fore Peak Tank (C)		-158.90						
N°1 Water Ballast Tank (PS)		-149.52						
N°1 Water Ballast Tank (SB)		-149.52						
N° 2 Water Ballast Tank (PS)		- 98.16						
N° 2 Water Ballast Tank (SB)		-98.16						
N°3B Water Ballast Tank (PS)		8.92						
N°3B Water Ballast Tank(SB)		8.92						
After Peak Tank		161.71						
Total - Water Ballast Tank								

Tanks	Weight (t)	Lcg (m)	Long. Mom (t x m)	Vcg (m)	Vert. Mom (t x m)	Tcg (m)	Transv. Mom (t x m)	FSM (MT-m)
N° 1 Cargo Oil Tank (C)		-117.22						
N° 2 Cargo Oil Tank (C)		-79.14						
N° 3 Cargo Oil Tank (C)		-22.02						
N° 4 Cargo Oil Tank (C)		35.10						
N° 5 Cargo Oil Tank (C)		89.85						
N° 1A Cargo Oil Tank (PS)		-124.82						
N° 1A Cargo Oil Tank (SB)		-124.82						
N° 2A Cargo Oil/Separation Tank (PS)		-74.38						
N° 2A Cargo Oil/Separation Tank (SB)		-74.38						
N° 3 Cargo Oil Tank (PS)		-45.82						
N° 3 Cargo Oil Tank (SB)		-45.82						
N° 3A Cargo Oil Tank (PS)		-17.26						
N° 3A Cargo Oil Tank (SB)		-17.26						
N° 4 Cargo Oil/Separation Tank (PS)		32.72						
N° 4 Cargo Oil/Separation Tank (SB)		32.72						
N° 4A Cargo Oil Tank (PS)		54.14						
N° 4A Cargo Oil Tank (SB)		54.14						
N° 5 Cargo Oil Tank (PS)		84.21						
N° 5 Cargo Oil Tank (SB)		84.21						
Slop Tank (PS)		113.06						
Slop Tank (SB)		113.06						
Total - Cargo/Separation Tank								
Constants	206.1	121.17		27.22		-0.31		
Provisions	20.4	131.42		29.10		7.40		
Liquids in Plant	1046.0	-10.78		34.00		-4.94		
Mooring load		-138.55		-2.57		0.00		
Risers load		-138.55		-2.57		0.00		
FPSO Lightweight	45450.0	5.814		17.907		-0.456		
FPSO Displacement								

Stability Calculation Sheet

(Follow-up)

Check the load condition in the following way:

With the total weight from column 1 (Displacement) interpolate in Hydrostatic Table.

Correspondent Draft (interpolated from Hydrostatic Table) = _____ m

VCG = Total Vertical Moment / Total Weight (Displacement) = _____ m

Correction of free surface **GGo** = Sum FSM / Displacement (t) = _____ m

KGo = VCG + GGo = _____ m (Vertical position of gravity center corrected to free surface effect)

KMT = Interpolated from Hydrostatic Table = _____ m

GMo = KMT – KGo = _____ m (Initial metacentric height corrected to free surface effect)

LCG = Total Longitudinal Moment / Total Weight (Displacement) = _____ m

LCB = Interpolated from Hydrostatic Table = _____ m

Trim Arm = LCG – LCB = _____ m

MTC = Interpolated from Hydrostatic Table = _____ m.t

TRIM = Trim Arm x Displacement / MTC x 100 = _____ m

LCF = Interpolated from Hydrostatic Table = _____ m

Change in Fwd Draft = Trim x (164.592 + LCF) / 329.184 = _____ m

Fwd Draft = Correspondent Draft – Change in Fwd Draft = _____ m

Aft Draft = Fwd Draft + TRIM = _____ m

KGmax = Interpolated from Maximum Allowable KG Curve according to operation condition, correspondent draft and trim of the condition.

KGmax = _____ m

If **KGo** < **KGmax** => The condition complies with stability criteria

Note: aft = + value, fwd = - value

Stability Calculation Sheet (Example)

Tanks	Weight (t)	Lcg (m)	Long. Mom (t x m)	Vcg (m)	Vert. Mom (t x m)	Tcg (m)	Transv. Mom (t x m)	FSM (MT-m)
Storage Diesel Oil Tank N°1	517.3	141.41	73151.4	23.18	11991.0	13.61	7040.45	92
Storage Diesel Oil Tank N°2	258.0	137.88	35575.8	22.97	5926.7	-12.54	-3235.57	31
Diesel Oil Daily Tank	80.1	131.42	10521.5	22.43	1795.7	12.82	1026.37	15
Settling Tank N° 1	140.0	127.24	17809.8	22.43	3139.5	12.82	1794.42	26
Settling Tank N° 2	100.0	122.68	12265.5	22.43	2242.6	12.82	1281.74	26
L. O. Storage Tank	26.6	144.72	3853.9	20.95	557.9	-12.82	-341.40	5
Total - Diesel Oil and Lubricating Oil Tank	**1122.0**		**153177.9**		**25653.5**		**7566.0**	**195**
Potable Water Tank PS	301.4	156.73	47238.4	25.42	7661.6	9.27	2794.0	0
Potable Water Tank SB	333.9	156.83	52365.5	25.42	8487.7	-8.76	-2925.0	0
Distilled Water Tank	22.4	147.76	3309.8	21.00	470.4	-11.87	-265.9	0
Total - Fresh Water Tank	**657.7**		**102913.8**		**16619.7**		**-396.9**	**0**
Sewage Tank	132.5	123.61	16378.3	8.25	1093.1	-13.34	-1767.6	129
Overflow Tank	132.5	123.61	16378.3	8.25	1093.1	13.34	1767.6	129
Bilge Tank	47.8	133.15	6364.6	0.79	37.8	2.78	132.9	176
Drain Tank	30.2	144.34	4359.1	2.12	64.0	0.00	132.9	68
Total - Miscellaneous Tank	**343.0**		**43480.3**		**2288.0**		**132.9**	**502**
Fore Peak Tank (C)	943.3	-158.98	-149965.8	3.66	3452.5	0.00	0.0	8836
N°1 Water Ballast Tank (PS)	-	-149.52	-	-	-	-	-	-
N°1 Water Ballast Tank (SB)	-	-149.52	-	-	-	-	-	-
N° 2 Water Ballast Tank (PS)	-	- 98.16	-	-	-	-	-	-
N° 2 Water Ballast Tank (SB)	-	-98.16	-	-	-	-	-	-
N°3B Water Ballast Tank (PS)	-	8.92	-	-	-	-	-	-
N°3B Water Ballast Tank(SB)	-	8.92	-	-	-	-	-	-
After Peak Tank	-	161.71	-	-	-	-	-	-
Total - Water Ballast Tank	**943.3**		**-149965.8**		**3452.5**		**0.0**	**8836**

Tanks	Weight (t)	Lcg (m)	Long. Mom (t x m)	Vcg (m)	Vert. Mom (t x m)	Tcg (m)	Transv. Mom (t x m)	FSM (MT-m)
N° 1 Cargo Oil Tank (C)	9806.85	-117.21	-1149451.1	13.08	128273.6	0.00	0.0	14526
N° 2 Cargo Oil Tank (C)	29417.6	-79.06	-2325696.6	13.08	384782.2	0.00	0.0	43575
N° 3 Cargo Oil Tank (C)	23527.54	-21.92	-515676.6	10.46	246098.1	0.00	0.0	43575
N° 4 Cargo Oil Tank (C)	29417.6	35.18	1034970.0	13.08	384782.2	0.00	0.0	43575
N° 5 Cargo Oil Tank (C)	26710.61	89.85	2399948.3	13.50	360593.2	-0.04	-988.3	42315
N° 1A Cargo Oil Tank (PS)	10860.28	-124.71	-1354429.0	13.69	148677.2	17.12	185928.0	7819
N° 1A Cargo Oil Tank (SB)	10860.27	-124.71	-1354427.7	13.69	148677.1	-17.12	-185927.8	7819
N° 2A Cargo Oil/Separation Tank (PS)	10099.52	-74.36	-750970.0	12.86	129879.8	18.33	185124.2	7521
N° 2A Cargo Oil/Separation Tank (SB)	10099.52	-74.36	-750970.0	12.86	129879.8	-18.33	-185124.2	7521
N° 3 Cargo Oil Tank (PS)	9334.34	-45.80	-427475.4	11.89	110985.3	18.33	171098.5	7521
N° 3 Cargo Oil Tank (SB)	8271.2	-45.79	-378763.1	10.54	87178.4	-18.33	-151611.1	7521
N° 3A Cargo Oil Tank (PS)	8770.88	-17.23	-151157.3	11.17	97970.7	18.33	160770.2	7521
N° 3A Cargo Oil Tank (SB)	8770.88	-17.23	-151157.3	11.17	97970.7	-18.33	-160770.2	7521
N° 4 Cargo Oil/Separation Tank (PS)	7087.35	32.74	232032.8	10.84	76826.9	18.33	129911.1	6267
N° 4 Cargo Oil/Separation Tank (SB)	7087.35	32.74	232032.8	10.84	76826.9	-18.33	-129911.1	6267
N° 4A Cargo Oil Tank (PS)	5654.43	54.15	306204.3	10.84	61294.0	18.33	103645.7	5000
N° 4A Cargo Oil Tank (SB)	5654.43	54.15	306204.3	10.84	61294.0	-18.33	-103645.7	5000
N° 5 Cargo Oil Tank (PS)	13962.23	84.21	1175703.5	13.56	189327.8	17.88	249644.7	11157
N° 5 Cargo Oil Tank (SB)	13962.21	84.21	1175701.9	13.56	189327.6	-17.88	-249644.3	11157
Slop Tank (PS)	3259.76	113.04	368476.8	16.13	52579.9	16.60	54112.0	3316
Slop Tank (SB)	3259.71	113.04	368471.1	16.13	52579.1	-16.60	-54111.2	3316
Total - Cargo/Separation Tank	**255874.6**		**-1710428.4**		**3215804.8**		**18500.4**	**299810.0**
Constants	206.1	121.17	24973.1	27.22	5610.0	-0.31	-63.9	-
Provisions	20.4	131.42	2681.0	29.10	593.6	7.40	151.0	-
Liquids in Plant	1046.0	-10.78	-11280.1	34.00	35564.0	-4.94	-5167.2	-
Mooring load	384.3	-138.55	-53246.3	-2.57	-988.0	0.00	0.0	-
Risers load	45.9	-138.55	-6359.6	-2.57	-118.0	0.00	0.0	-
FPSO Lightweight	45450	5.81	264246.30	17.91	813873.15	-0.46	-20725.2	-
FPSO Displacement	**306093.2**		**-1339794.7**		**4118354.4**		**-3537.6**	**309343.0**

Stability Calculation Sheet (Example)

(Follow-up)

Check the load condition in the following way:

With the total weight from column 1 (Displacement) interpolate in Hydrostatic Table.

Correspondent Draft (interpolated from Hydrostatic Table) = 20.753 m

VCG = Total Vertical Moment / Total Weight (Displacement) = 13.454 m

Correction of free surface **GGo** = Sum FSM / Displacement (t) = 1.011 m

KGo = VCG + GGo = 14.465 m (Vertical position of gravity center corrected to free surface effect)

KMT = Interpolated from Hydrostatic Table = 21.259 m

GMo = KMT – KGo = 6.794 m (Initial metacentric height corrected to free surface effect)

LCG = Total Longitudinal Moment / Total Weight (Displacement) = -4.377 m

LCB = Interpolated from Hydrostatic Table = -7.508 m

Trim Arm = LCG – LCB = 3.131 m

MTC = Interpolated from Hydrostatic Table = 3874.0 m.t

TRIM = Trim Arm x Displacement / MTC x 100 = 2.474 m

LCF = Interpolated from Hydrostatic Table = 1.596 m

Change in Fwd Draft = Trim x (164.592 + LCF) / 329.184 = 1.249 m

Fwd Draft = Equivalent Draft – Change in Fwd Draft = 19.504 m

Aft Draft = Fwd Draft + TRIM = 21.978 m

KGmax = Interpolated from Maximum Allowable KG Curve according to operation condition, correspondent draft and trim of the condition.

KGmax = 16.719 m

If **KGo** < **KGmax** => The condition deal with stability criteria

Note: aft = + value, fwd = - value

12.11. Maximum Allowable Shear Forces and Bending Moments in Still Waters

The maximum and minimum allowable bending moments and shear forces in still waters have been based on values presented bellow:

Frame no.	Abscissa(*) (m)	Bending Moment (t x m)	Shear Force (t)
61	120.782	± 600000	± 13500
64	106.502	± 600000	± 12490
73	63.662	± 600000	± 13500
77	44.622	± 600000	± 13500
82	20.822	± 600000	± 13500
85	6.542	± 600000	± 13500
87	-2.978	± 600000	± 13500
93	-31.538	± 600000	± 13500
97	-50.578	± 600000	± 13500
99	-60.098	± 600000	± 13500
105	-88.658	± 600000	± 13500
109	-107.698	± 600000	± 13500
113	-126.738	± 600000	± 13500
115	-136.388	± 600000	± 13500
116	-141.213	± 600000	± 13500
117	-146.038	± 600000	± 13230
120	-153.763	± 600000	± 8500

Abscissa(*) - Abscissa in relation to the M.S.

13. FLOODING AND CRITICAL POINTS DEFINITION

The lists below present the flooding and critical points definition as verified on board of the FPSO. Origin is referenced as follows:
Long. – Midship Section
Transv. – Center Line
Vert. – Base Line

Critical Points: Weathertight Openings

		Long. (m)	Transv. (m)	Vert. (m)
1	After Peak Air Pipe	158.282	-1.20	28.34
2	Potable W. Tank Air Pipe (PS)	154.422	2.27	28.33
3	Potable W. Tank Air Pipe (SB)	154.422	-2.27	28.33
4	Distilled W. Tank Air Pipe	146.622	-12.90	28.18
5	Sludge Tank Air Pipe	147.382	16.30	27.91
6	Storage D.O. Tank Nº2 Air Pipe	136.262	-11.00	28.22
7	Storage D.O. Tank Nº1 Air Pipe	136.582	11.00	28.22
8	Drain Tank Air Pipe	136.202	-10.55	28.19
9	(Overflow Tank + Settling Tanks Nº1 and 2 + D.O. Daily Tank + Drain Clean Tank) Air Pipe	136.282	10.40	28.23
10	Bilge Tank Air Pipe	129.902	18.40	27.77
11	Nº 3B W.B. Tank (PS) Air Pipe	19.822	19.20	27.72
12	Nº 3B W.B. Tank (PS) Air Pipe	-1.478	11.40	28.19
13	Nº 3B W.B. Tank (SB) Air Pipe	19.822	-11.10	28.22
14	Nº 3B W.B. Tank (SB) Air Pipe	-1.478	-11.10	28.22
15	Nº 2 W.B. Tank (PS) Air Pipe	-89.658	10.70	28.23
16	Nº 2 W.B. Tank (PS) Air Pipe	-106.698	10.70	28.23

		Long. (m)	Transv. (m)	Vert. (m)
17	Nº 2 W.B. Tank (SB) Air Pipe	-89.658	-11.60	28.20
18	Nº 2 W.B. Tank (SB) Air Pipe	-106.698	-11.60	28.20
19	Nº 1 W.B. Tank (PS) Air Pipe	-153.263	9.10	28.24
20	Nº 1 W.B. Tank (SB) Air Pipe	-153.263	-9.10	28.24
21	Fore Peak Tank Air Pipe (SB)	-166.883	-4.80	28.30
22	Fore Peak Tank Air Pipe (PS)	-166.883	4.80	28.30
23	Engine Room Void Space Air Pipe (SB)	121.792	-18.75	27.89
24	Engine Room Void Space Air Pipe (PS)	121.792	18.75	27.89
25	Engine Room D.B. Void Space Air Pipe	149.502	16.30	27.91
26	Engine Room D.B. Void Space Air Pipe	139.482	-10.80	27.91
27	Stern Tube Void Space Air Pipe	158.492	-0.40	28.48
28	Turret Void Space Air Pipe	-143.613	6.40	28.11
29	Forward Store Vent	-158.213	1.47	29.18
30	Offloading Hydraulic System Compart. Vent	169.632	4.00	29.15
31	CO2 Room Vent	168.632	4.00	28.95
32	Rope Store Vent	172.522	4.00	28.31
33	VAC Inlet	135.982	-4.00	29.20
34	VAC Emerg. Inlet	135.982	-2.20	29.06
35	Forward Store Hatch	-162.918	1.57	29.88
36	Forward Store Door	-162.023	-2.05	28.12
37	Pump Room Casing Doors (SB)	118.782	-7.80	27.94
38	Pump Room Casing Doors (PS)	118.782	7.80	27.94
39	Accomodation Deck House Fwd Doors (SB)	126.102	-18.40	27.61
40	Accomodation Deck House Fwd Doors (PS)	126.102	18.40	27.61
41	Accomodation Deck House VAC Door	135.982	-8.20	28.08
42	Accomodation Deck House Dry Provision Store Door	135.982	12.00	28.04
43	CO2 Room Door	158.492	2.30	28.15
44	Offloading Hydraulic System Compart. Door	158.492	-5.80	28.13
45	Diesel Hydraulic Fire Pump Compart. Door	154.982	1.30	28.17
46	Engine Room Emergency Exit Door	154.982	-1.30	28.17
47	Engine Room Door	153.462	-8.30	28.06
48	Rope Store Hatch	169.777	1.40	28.17
49	Offloading Hydraulic System Compart. Hatch	162.152	-4.35	28.14
50	Eng. Room Skylight	139.222	0.10	28.18
51	Eng. Room Store Hatch	139.262	2.80	28.16

Flooding Points: Unprotected Openings

1	Boat Deck Doors (PS)	126.862	18.40	30.79
2	Boat Deck Doors (SB)	126.862	-18.40	30.79

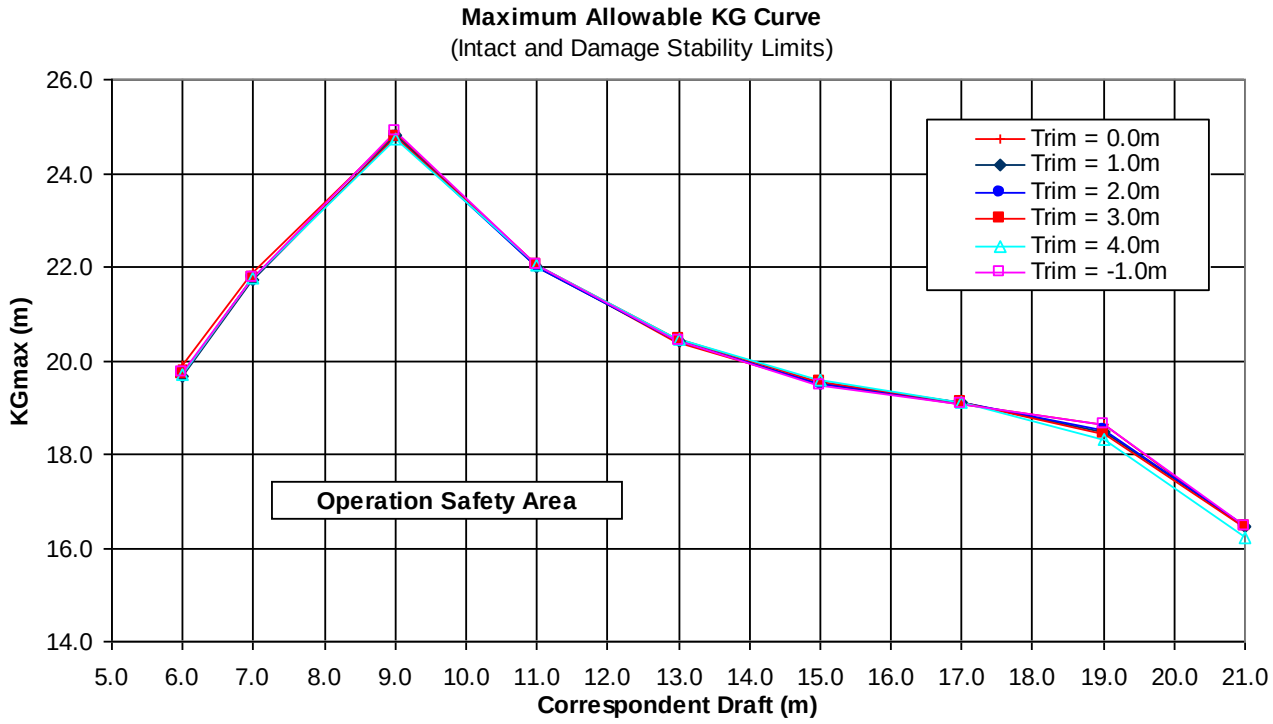
As shown on the detailed loading conditions presented in this document, for practical reason, all openings were considered located on the starboard side of the unit.

14. MAXIMUM ALLOWABLE KG CURVE - MODU

The Maximum Allowable KG Curve shall be used is a quick reference when evaluating the stability of any operational conditions. The curve defines adequate operational limits where the unit will keep a safely stability condition.

The Maximum Allowable KG Curve considering damage and intact stability limits was obtained as shown in the PROJEMAR document no. I-DE-3010.56-9310-941-XJM-207 - "Maximum Allowable KG Curve" - Rev.C.

The following graphic shows the Maximum Allowable KG Curve for the Damage and Intact Condition defining the operation safety area in accordance with descriptive above:



Notes:

- For intermediate drafts and trims values shall be obtained by linear interpolation using the Maximum Allowable KG Table;
- When computing the loading condition KG in order to use the Maximum Allowable values, free surface effects shall be considering for all partial load tanks;
- Verify if the calculated values for operational conditions satisfy the requirements above.

Correspondent Draft (m)	Maximum Allowable KG Curve					
	Trim = -1.0m	Trim = 0.0m	Trim = 1.0m	Trim = 2.0m	Trim = 3.0m	Trim = 4.0m
6.0	19.73	19.90	19.66	19.70	19.72	19.71
7.0	21.77	21.88	21.71	21.76	21.76	21.75
9.0	24.89	24.84	24.80	24.77	24.77	24.73
11.0	22.05	22.02	22.01	22.00	22.03	22.02
13.0	20.40	20.39	20.40	20.41	20.44	20.45
15.0	19.47	19.50	19.51	19.52	19.56	19.57
17.0	19.07	19.08	19.10	19.09	19.09	19.10
19.0	18.63	18.64	18.49	18.53	18.43	18.30
21.0	16.47	16.41	16.47	16.47	16.47	16.20

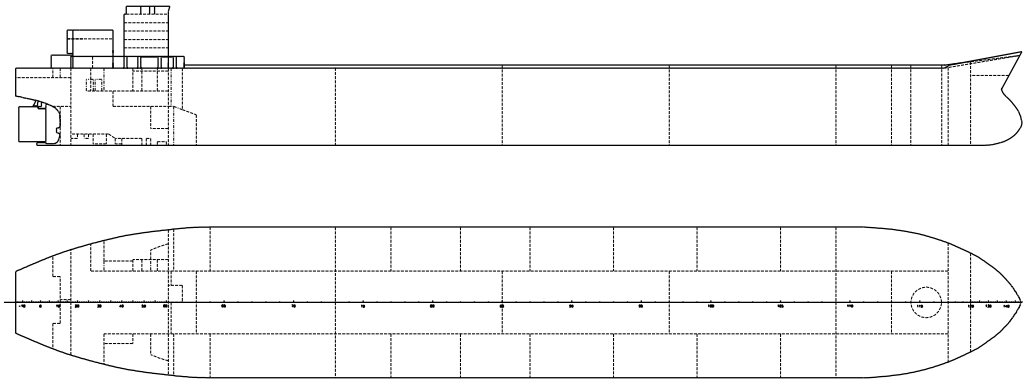
15. TYPICAL LOADING CONDITIONS

Summary Table

Cond. no.	Condition	DWT (t)	Displ. (t)	Trim (m)	Draft FP (m)	Draft MS (m)	Draft AP (m)	GMo (m)	KGo (m)	*Max. KG (m)
1	LIGHT SHIP	-	45450.0	3.13	1.937	3.501	5.066	44.033	17.907	-
2	MAXIMUM LOADED – 100% CONSUMABLES	260643.1	306093.1	2.54	19.464	20.735	22.005	6.887	14.475	16.74
3	MAXIMUM LOADED – 10% CONSUMABLES	259042.4	304492.4	1.94	19.670	20.639	21.608	6.900	14.413	16.84
4	80% OFFLOADING – 100% CONSUMABLES	211481.8	256931.8	0.90	17.186	17.634	18.081	7.770	13.575	18.91
5	80% OFFLOADING – 10% CONSUMABLES	209879.2	255329.2	0.23	17.417	17.531	17.646	7.810	13.519	18.96
6	60% OFFLOADING – 100% CONSUMABLES	159667.8	205117.8	0.85	13.844	14.271	14.697	10.462	11.825	19.83
7	60% OFFLOADING – 10% CONSUMABLES	158084.1	203534.1	0.11	14.100	14.155	14.211	10.567	11.742	19.88
8	40% OFFLOADING – 100% CONSUMABLES	107730.6	153180.6	3.20	9.282	10.882	12.482	13.200	12.013	22.19
9	40% OFFLOADING – 10% CONSUMABLES	106146.5	151596.5	2.41	9.548	10.751	11.955	13.408	11.902	22.36
10	27% OFFLOADING – 100% CONSUMABLES	73956.4	119406.4	3.32	6.956	8.615	10.275	14.589	14.546	24.18
11	27% OFFLOADING – 10% CONSUMABLES	72377.4	117827.4	2.49	7.235	8.480	9.725	14.916	14.437	23.99
12	MINIMUM LOADED – 100% CONSUMABLES	40795.7	86245.7	1.96	5.329	6.310	7.291	20.911	15.704	20.34
13	MINIMUM LOADED – 10% CONSUMABLES	39196.6	84646.6	1.09	5.625	6.172	6.719	21.521	15.574	20.02
14	27% LOADING – 100% CONSUMABLES	74691.9	120141.9	0.99	8.095	8.592	9.089	16.303	12.615	24.17
15	27% LOADING – 10% CONSUMABLES	73095.0	118545.0	0.16	8.378	8.458	8.539	16.655	12.480	14.03
16	40% LOADING – 100% CONSUMABLES	107727.6	153177.6	2.21	9.747	10.852	11.956	12.114	13.053	22.21
17	40% LOADING – 10% CONSUMABLES	106126.7	151576.8	1.41	10.019	10.723	11.428	12.313	12.951	22.39
18	60% LOADING – 100% CONSUMABLES	159588.9	205038.9	0.70	13.912	14.263	14.614	9.257	13.026	19.83
19	60% LOADING – 10% CONSUMABLES	158003.9	203453.9	0.05	14.170	14.147	14.125	9.353	12.952	19.88
20	NORMAL BALLAST – 100% CONSUMABLES	46717.7	92167.7	1.16	6.108	6.690	7.272	17.257	17.541	21.08
21	NORMAL BALLAST – 10% CONSUMABLES	45112.5	90562.5	0.30	6.402	6.552	6.702	17.749	17.453	20.93
22	TRANSPORT CONDITION – 100% CONSUMABLES	36874.2	82324.2	3.27	4.448	6.083	7.719	22.359	15.641	19.89
23	TRANSPORT CONDITION – 10% CONSUMABLES	35279.2	80729.2	2.41	4.738	5.944	7.150	23.042	15.502	19.61

Note: For intermediate drafts and trims values shall be obtained by linear interpolation using the Maximum Allowable KG Table.

Condition no.1: Light Ship



Floating Status

Draft FP	1.937m	Heel	stbd 0.59 deg.	GM(Solid)	44.033m
Draft MS	3.501m	Equil	Yes	F/S Corr	0.000m
Draft AP	5.066m	Wind	0.0 kn	GM(Fluid)	44.033m
Trim	aft 3.13/329.18	Wave	No	KMT	61.939 m
LCG	5.814a	VCG	17.907 m	TPcm	140.49

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Displacement	45,450.00	5.814a	0.456s	17.907

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	7999.2	12.2	13.9	18354
ACOMODATIONS	311.4	34.0	35.7	2418
ACOMOD AFT	171.7	29.9	31.5	1080
HELIDECK	33.5	36.2	37.9	326
V-533603	15.3	26.4	28.1	39
V-533604A	15.3	26.4	28.1	39
MODULE M01,M02,M04 (base)	123.5	30.3	32.0	930
MODULE M01	179.3	32.9	34.5	612
MODULE M02	163.6	32.9	34.61	560
MODULE M04	251.1	35.1	36.7	2007
MODULE M03(base)	37.9	28.4	30.1	269
MODULE M03	250.7	38.8	40.5	1005
VE SKID SUP.P	46.7	31.1	32.8	455
SKID FORE.P	71.0	28.7	30.4	587
CRANE CV77.S	107.9	32.5	34.2	1095
CRANE CV69.P	107.3	32.4	34.1	1084
CRANE CV109.P	105.3	32.7	34.4	1076
TURRET	442.2	36.0	37.7	4939
LAYDOW AREA	38.1	27.7	29.4	264
CO2 ROOM.S	21.7	25.5	27.2	118
V-541202	26.4	27.7	29.4	70
Fender	55.6	25.9	27.6	111
Total	**10574.7**			**37439**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	37439.0s
80.000s	37439.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.54a	3.499	-1.279	0.000	26.087 (1)	
5.00s	0.55a	3.468	2.551	0.056	24.394 (1)	
10.00s	0.59a	3.279	5.685	0.420	22.546 (1)	
15.00s	0.68a	2.720	6.963	0.985	20.745 (1)	
20.00s	0.79a	1.883	7.258	1.613	19.009 (1)	
30.00s	0.99a	-0.344	6.564	2.838	15.621 (1)	
40.00s	1.14a	-3.074	5.074	3.861	12.312 (1)	
50.00s	1.18a	-6.181	3.255	4.590	9.258 (1)	
60.00s	1.12a	-9.559	1.470	5.001	6.549 (1)	
68.15s	1.07a	-12.355	0.002	5.106	4.364 (1)	RaZero
70.00s	1.07a	-12.975	-0.350	5.101	3.854 (1)	
80.00s	1.02a	-16.122	-2.387	4.865	1.082 (1)	

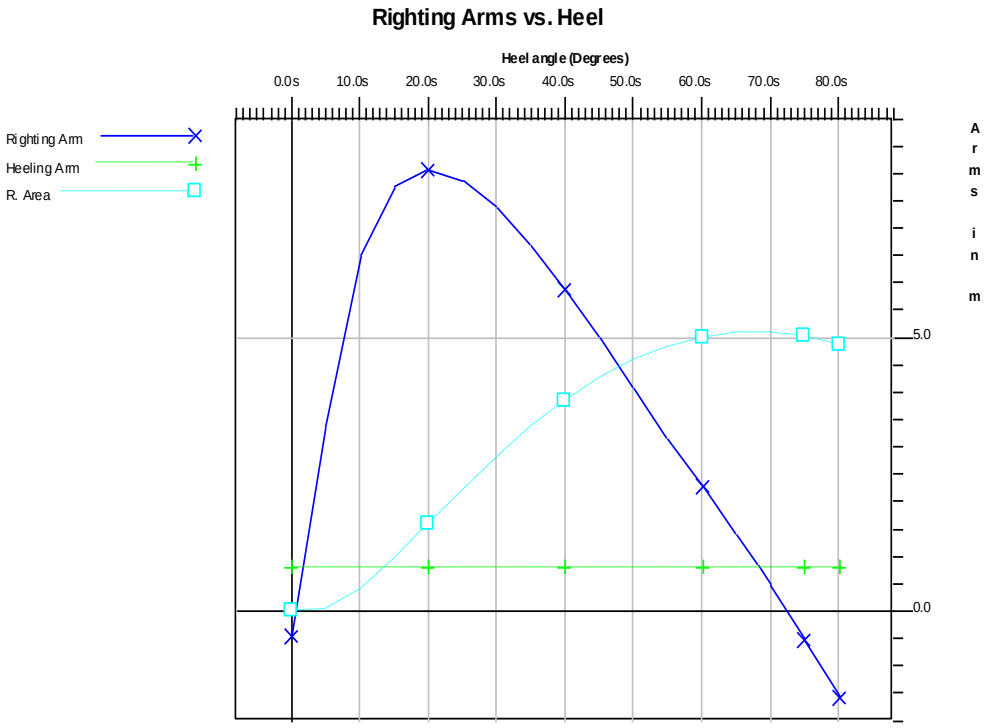
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	26.087

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	6.450	5.050	Yes



Longitudinal Strength At Sea Condition (stbd 0.59 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1326.46	11422	41.51	8.04
20	151.942a	1503.22	14682	38.56	8.47
24	148.902a	1802.12	19775	37.27	9.20
28	145.862a	2072.92	25730	35.92	10.03
32	142.822a	2325.11	32485	34.66	10.90
36	139.782a	2549.76	39960	33.35	11.76
40	136.742a	2705.14	48032	31.52	12.59
44	133.702a	3030.26	56844	31.83	13.44
48	130.662a	3442.34	66740	32.92	14.36
52	127.622a	3858.91	77856	33.87	15.38
56	124.582a	4299.36	90228	34.87	16.47
60	121.542a	4733.50	104018	35.68	17.64
61	120.782a	4843.22	107673	35.88	17.95
62	116.022a	5002.93	131226	38.01	21.87
63	111.262a	5100.77	155396	39.77	25.90
64	106.502a	5020.01	179595	40.19	29.93
65	101.742a	4887.50	203300	38.78	33.88
66	96.982a	4695.13	226224	36.93	37.70
67	92.222a	4454.39	248113	34.73	41.35
68	87.462a	4168.62	268751	32.22	44.79
69	82.702a	3887.78	287981	29.79	48.00
70	77.942a	3575.26	305904	27.16	50.98
71	73.182a	3190.99	322114	24.04	53.69
72	68.422a	2785.84	336438	20.81	56.07
73	63.662a	2370.38	348812	17.56	58.14
74	58.902a	1959.40	359208	14.51	59.87
75	54.142a	1560.56	367677	11.56	61.28
76	49.382a	1173.87	374276	8.70	62.38
77	44.622a	845.00	379118	6.26	63.19
78	39.862a	528.04	382532	3.91	63.76
79	35.102a	177.79	384303	1.32	64.05
80	30.342a	-75.70	384585	0.56	64.10
81	25.582a	-290.78	383806	2.15	63.97
82	20.822a	-498.92	382020	3.70	63.67
83	16.062a	-700.13	379260	5.19	63.21
84	11.302a	-894.40	375558	6.63	62.59
85	6.542a	-1081.74	370949	8.01	61.82
86	1.782a	-1264.15	365457	9.36	60.91
87	2.978f	-1429.45	359137	10.59	59.86
88	7.738f	-1579.94	352065	11.70	58.68
89	12.498f	-1715.63	344312	12.71	57.39
90	17.258f	-1836.51	335948	13.60	55.99
91	22.018f	-1942.59	327044	14.39	54.51
92	26.778f	-2029.95	317670	15.04	52.94
93	31.538f	-2096.00	307945	15.53	51.32
94	36.298f	-2157.48	297916	15.98	49.65
95	41.058f	-2214.41	287605	16.40	47.93
96	45.818f	-2266.77	277034	16.79	46.17
97	50.578f	-2357.44	266171	17.46	44.36
98	55.338f	-2476.87	254757	18.35	42.46
99	60.098f	-2584.15	242804	19.14	40.47

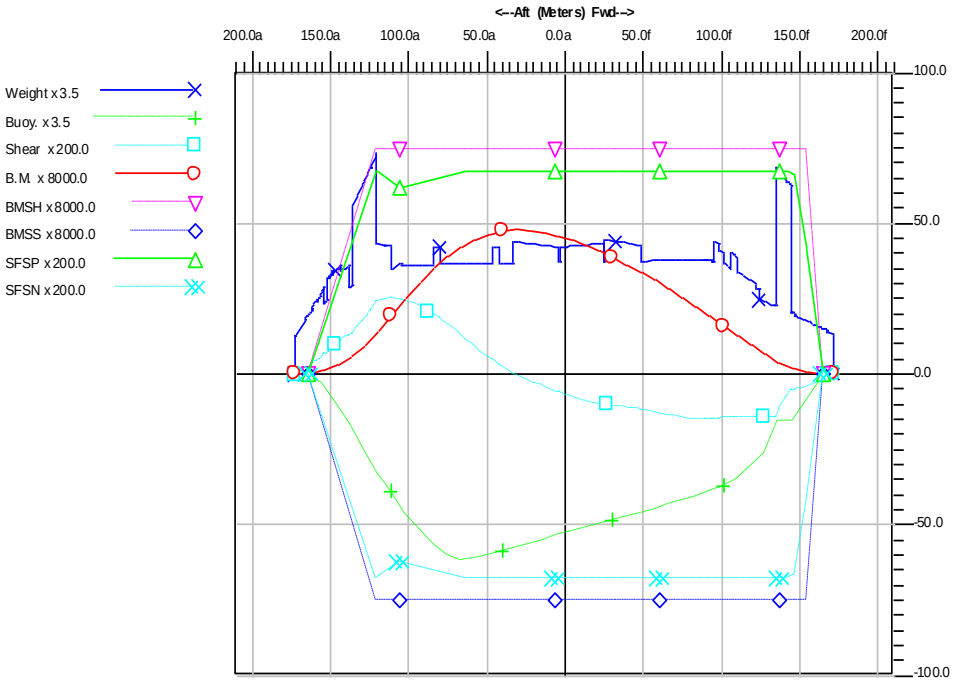
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	-2679.29	230368	19.85	38.39
101	69.618f	-2762.27	217509	20.46	36.25
102	74.378f	-2833.11	204283	20.99	34.05
103	79.138f	-2891.79	190749	21.42	31.79
104	83.898f	-2937.90	176966	21.76	29.49
105	88.658f	-2970.18	162995	22.00	27.17
106	93.418f	-2985.25	148910	22.11	24.82
107	98.178f	-2918.27	134903	21.62	22.48
108	102.938f	-2879.54	121235	21.33	20.21
109	107.698f	-2840.93	107666	21.04	17.94
110	112.458f	-2801.10	94382	20.75	15.73
111	117.218f	-2795.22	81155	20.71	13.53
112	121.978f	-2779.42	67981	20.59	11.33
113	126.738f	-2809.57	54788	20.81	9.13
114	131.563f	-2823.69	41283	20.92	6.88
115	136.388f	-2381.45	28296	17.64	4.72
116	141.213f	-1477.44	19084	10.94	3.18
117	146.038f	-989.87	13703	7.48	2.28
118	148.613f	-935.30	11274	8.03	1.88
119	151.188f	-867.58	9002	8.61	1.50
120	153.763f	-785.13	6971	9.24	1.16

Longitudinal Strength At Sea Condition (stbd 0.59 deg.)

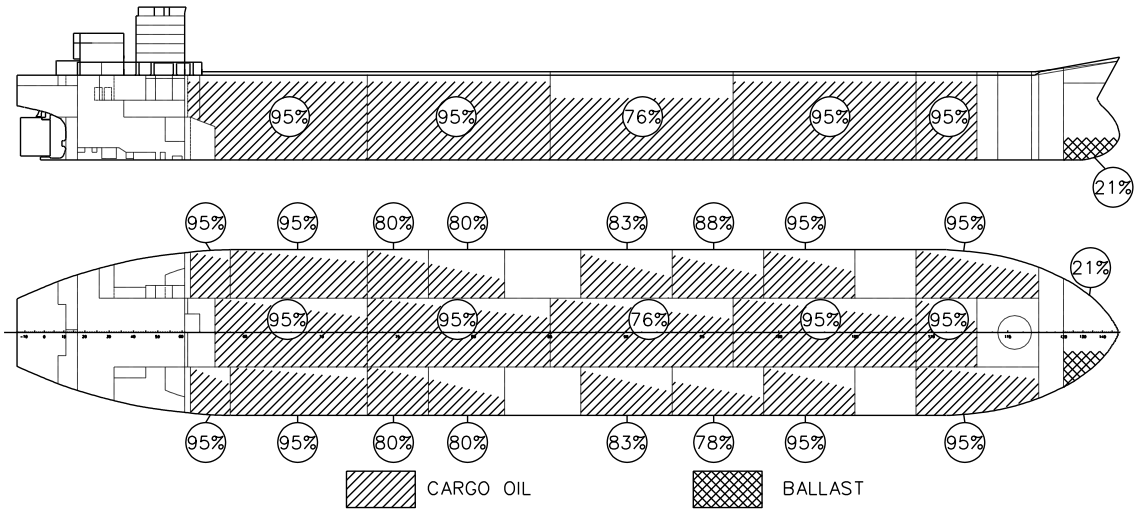
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1326.46	11422	41.51	8.04
61	120.782a	4843.22	107673	35.88	17.95
64	106.502a	5020.01	179595	40.19	29.93
73	63.662a	2370.38	348812	17.56	58.14
77	44.622a	845.00	379118	6.26	63.19
82	20.822a	-498.92	382020	3.70	63.67
85	6.542a	-1081.74	370949	8.01	61.82
87	2.978f	-1429.45	359137	10.59	59.86
93	31.538f	-2096.00	307945	15.53	51.32
97	50.578f	-2357.44	266171	17.46	44.36
99	60.098f	-2584.15	242804	19.14	40.47
105	88.658f	-2970.18	162995	22.00	27.17
109	107.698f	-2840.93	107666	21.04	17.94
113	126.738f	-2809.57	54788	20.81	9.13
114*	133.525f	-2819.78	35785	20.89	5.96
115	136.388f	-2381.45	28296	17.64	4.72
116	141.213f	-1477.44	19084	10.94	3.18
116*	144.075f	-1028.74	15645	7.71	2.61
117	146.038f	-989.87	13703	7.48	2.28
120	153.763f	-785.13	6971	9.24	1.16

Max. Shear	5100.77 MT	at	111.262a		39.77%Max
Max. Bending Moment	384585 MT-m	at	30.342a	(Hogging)	64.10%Max

Longitudinal Strength At Sea Condition



Condition no.2: MAXIMUM LOADED – 100% CONSUMABLES



Floating Status

Draft FP	19.464m	Heel	zero	GM(Solid)	7.889m
Draft MS	20.735m	Equil	Yes	F/S Corr	1.002m
Draft AP	22.005m	Wind	0.0 kn	GM(Fluid)	6.887m
Trim	aft 2.54/329.18	Wave	No	KMT	21.343 m
LCG	4.376f	VCG	13.453 m	TPcm	160.16

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	260,643.13	6.152f	0.080p	12.677
Displacement	306,093.13	4.376f	0.000	13.453

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	384.26	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	20.40	131.422a	7.400p	29.100
RISERS	45.87	138.554f	0.000	-2.570
Total Fixed	**47,152.65**	**4.687a**	**0.547s**	**18.123**

Tank Status

WATER BALLAST (SpGr 1.025)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
FORE PEAK	21.04%	943.27	158.981f	0.000	3.664	6,369.12
Subtotals:		**943.27**	**158.981f**	**0.000**	**3.664**	**6,369.12**

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	94.99%	10,860.28	124.714f	17.117p	13.689	7,812.00
N1A C O T.S	94.99%	10,860.27	124.714f	17.117s	13.689	7,812.00
N1 C O T .C	95.00%	9,806.85	117.209f	0.000	13.075	14,526.68
N2 C O T .C	95.00%	29,417.60	79.058f	0.000	13.076	43,575.88
N3 C O T .C	75.98%	23,527.54	21.918f	0.000	10.458	43,575.65
N4 C O T .C	95.00%	29,417.61	35.182a	0.000	13.076	43,575.89
N5 C O T .C	95.00%	26,710.62	89.866a	0.037s	13.502	42,316.04
N2A COT_SEP.P	95.00%	10,099.52	74.357f	18.328p	12.860	7,521.40
N2A COT_SEP.S	95.00%	10,099.52	74.357f	18.328s	12.860	7,521.40
N3 C O T.P	87.80%	9,334.34	45.796f	18.328p	11.888	7,520.78
N3 C O T.S	77.80%	8,271.20	45.793f	18.326s	10.540	7,520.78
N3A C O T.P	82.50%	8,770.88	17.234f	18.327p	11.173	7,520.75
N3A C O T.S	82.50%	8,770.88	17.234f	18.327s	11.173	7,520.75
N4 COT_SEP.P	80.00%	7,087.35	32.739a	18.326p	10.836	6,267.13
N4 COT_SEP.S	80.00%	7,087.35	32.739a	18.326s	10.836	6,267.13
N4A C O T.P	80.00%	5,654.43	54.153a	18.326p	10.836	5,000.04
N4A C O T.S	80.00%	5,654.43	54.153a	18.326s	10.836	5,000.04
N5 C O T.P	95.00%	13,962.23	84.206a	17.880p	13.562	11,160.65
N5 C O T.S	95.00%	13,962.21	84.206a	17.880s	13.562	11,160.64
SLOP TANK.P	95.00%	3,259.76	113.038a	16.599p	16.127	3,316.44
SLOP TANK.S	95.00%	3,259.71	113.038a	16.599s	16.127	3,316.44
Subtotals:		**255,874.53**	**6.683f**	**0.072p**	**12.566**	**299,808.47**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.163a	2.777p	0.786	175.21
DRAIN TK.C	50.00%	30.21	144.353a	0.000	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.569a	13.337p	8.255	128.63
SEWAGE.S	50.00%	132.51	123.569a	13.337s	8.255	128.63
Subtotals:		**343.06**	**126.737a**	**0.387p**	**6.673**	**500.39**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	100.00%	301.39	156.725a	9.274p	25.423	0.00
POTABLE W.S	100.00%	333.92	156.834a	8.760s	25.421	0.00
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**657.67**	**156.476a**	**0.602s**	**25.271**	**0.00**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	98.00%	99.98	122.683a	12.822p	22.434	18.67
DO SETTLING 1	98.00%	139.97	127.245a	12.822p	22.434	26.14
DO DAILY.P	98.00%	80.06	131.423a	12.822p	22.434	14.95
DO STORAGE.P	97.98%	517.30	141.440a	13.613p	23.178	75.97
DO STORAGE.S	98.00%	258.02	137.889a	12.540s	22.974	31.24
Subtotals:		**1,095.33**	**136.345a**	**7.222p**	**22.913**	**166.97**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.723a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.723a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	2316.9	3.5	13.8	5260
ACOMODATIONS	311.4	16.7	26.9	1672
ACOMOD AFT	171.7	12.5	22.8	709
HELIDECK	33.5	18.9	29.1	230
V-533603	15.3	9.0	19.3	24
V-533604A	15.3	9.0	19.3	24
MODULE M01,M02,M04 (base)	123.5	12.9	23.2	614
MODULE M01	179.3	15.5	25.8	419
MODULE M02	163.6	15.6	25.9	383
MODULE M04	251.1	17.7	28.0	1401
MODULE M03(base)	37.9	11.1	21.4	173
MODULE M03	250.7	21.5	31.8	722
VE SKID SUP.P	46.7	13.8	24.1	278
SKID FORE.P	71.0	11.4	21.6	380
CRANE CV77.S	107.9	15.2	25.4	679
CRANE CV69.P	107.3	15.0	25.3	671
CRANE CV109.P	105.3	15.4	25.7	735
TURRET	442.2	18.6	28.9	3473
LAYDOW AREA	38.1	10.3	20.6	168
CO2 ROOM.S	21.7	8.2	18.5	73
V-541202	26.4	10.4	20.7	45
Fender	55.6	8.6	18.8	69
Total	**4892.4**			**18203**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	18203.0s
80.000s	18203.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.44a	20.734	-0.059	0.000	9.078 (1)	
5.00s	0.44a	20.652	0.544	0.021	7.454 (1)	
10.00s	0.42a	20.394	1.172	0.096	5.814 (1)	
15.00s	0.40a	20.008	1.801	0.226	4.089 (1)	
20.00s	0.39a	19.669	2.229	0.403	2.111 (1)	
24.85s	0.37a	19.385	2.485	0.604	0.000 (1)	FldPt
30.00s	0.35a	19.113	2.634	0.834	-2.415 (1)	
37.65s	0.30a	18.728	2.700	1.192	-7.465 (1)	MaxRa
40.00s	0.28a	18.613	2.694	1.303	-7.467 (1)	
50.00s	0.19a	18.000	2.551	1.764	-12.718 (1)	
60.00s	0.11a	16.973	2.125	2.176	-17.746 (1)	
70.00s	0.03a	15.465	1.466	2.492	-22.289 (1)	
80.00s	0.05f	13.524	0.604	2.676	-26.192 (1)	

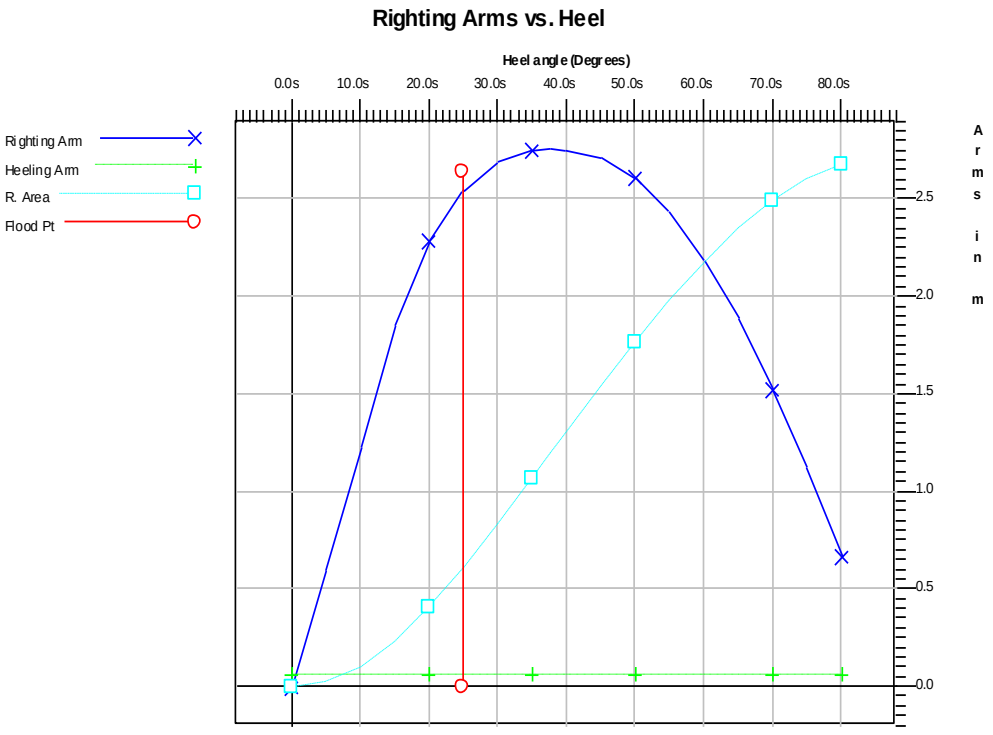
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	9.078

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	24.401	23.001	Yes



Longitudinal Strength At Sea Condition (zero)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	-51.12	-1159	1.60	0.82
20	151.942a	-404.75	-1631	10.38	0.94
24	148.902a	-942.75	-3575	19.50	1.66
28	145.862a	-1549.15	-7322	26.84	2.85
32	142.822a	-2202.44	-12915	32.83	4.33
36	139.782a	-3084.81	-20850	40.35	6.14
40	136.742a	-4174.07	-31768	48.64	8.33
44	133.702a	-5200.74	-46007	54.64	10.88
48	130.662a	-6321.21	-63417	60.46	13.65
52	127.622a	-7589.36	-84465	66.62	16.68
56	124.582a	-8872.57	-109443	71.96	19.97
60	121.542a	-10213.47	-138378	76.99	23.47
61	120.782a	-10352.18	-146177	76.68	24.36
62	116.022a	-11076.83	-197895	84.15	32.98
63	111.262a	-10637.38	-249924	82.93	41.65
64	106.502a	-9504.98	-297776	76.10	49.63
65	101.742a	-8403.32	-340296	66.68	56.72
66	96.982a	-7316.60	-377612	57.55	62.94
67	92.222a	-6240.49	-409782	48.65	68.30
68	87.462a	-5174.32	-436853	39.99	72.81
69	82.702a	-4071.08	-458816	31.19	76.47
70	77.942a	-2974.81	-475437	22.60	79.24
71	73.182a	-1928.79	-487013	14.53	81.17
72	68.422a	-885.37	-493607	6.61	82.27
73	63.662a	157.52	-495259	1.17	82.54
74	58.902a	736.67	-493039	5.46	82.17
75	54.142a	1318.15	-488057	9.76	81.34
76	49.382a	1901.97	-480302	14.09	80.05
77	44.622a	2533.80	-469708	18.77	78.28
78	39.862a	3197.16	-455923	23.68	75.99
79	35.102a	3817.41	-439137	28.28	73.19
80	30.342a	4524.59	-419244	33.52	69.87
81	25.582a	5260.36	-395863	38.97	65.98
82	20.822a	5993.19	-368986	44.39	61.50
83	16.062a	3902.82	-345342	28.91	57.56
84	11.302a	1814.40	-331643	13.44	55.27
85	6.542a	-272.07	-327881	2.02	54.65
86	1.782a	-2808.09	-335122	20.80	55.85
87	2.978f	-5331.92	-354407	39.50	59.07
88	7.738f	-4910.39	-378694	36.37	63.12
89	12.498f	-4483.88	-400962	33.21	66.83
90	17.258f	-4052.38	-421188	30.02	70.20
91	22.018f	-3615.90	-439348	26.78	73.22
92	26.778f	-3170.54	-455418	23.49	75.90
93	31.538f	-2713.66	-469330	20.10	78.22
94	36.298f	-2222.44	-480983	16.46	80.16
95	41.058f	-1736.48	-490311	12.86	81.72
96	45.818f	-1255.78	-497338	9.30	82.89
97	50.578f	-823.21	-502144	6.10	83.69
98	55.338f	102.93	-503767	0.76	83.96
99	60.098f	1031.39	-500976	7.64	83.50

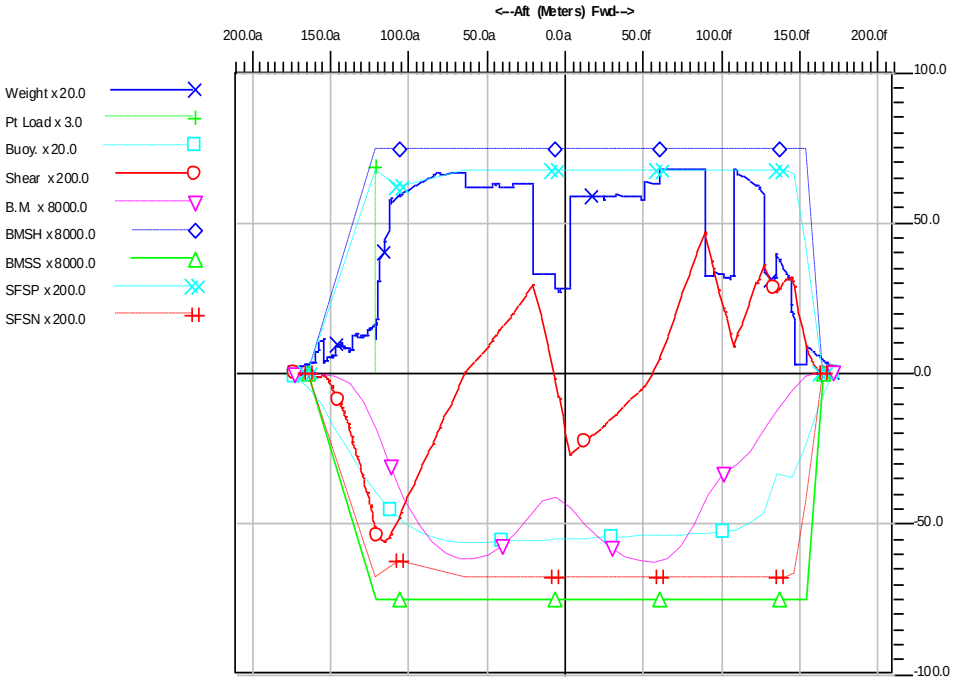
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	2423.68	-492661	17.95	82.11
101	69.618f	3818.29	-477714	28.28	79.62
102	74.378f	5215.24	-456123	38.63	76.02
103	79.138f	6614.51	-427877	49.00	71.31
104	83.898f	8016.15	-392965	59.38	65.49
105	88.658f	9420.31	-351375	69.78	58.56
106	93.418f	7485.21	-311051	55.45	51.84
107	98.178f	5627.50	-279802	41.69	46.63
108	102.938f	3733.02	-257384	27.65	42.90
109	107.698f	1820.15	-244134	13.48	40.69
110	112.458f	3280.70	-231842	24.30	38.64
111	117.218f	4674.57	-212806	34.63	35.47
112	121.978f	6040.82	-187199	44.75	31.20
113	126.738f	7317.07	-155282	54.20	25.88
114	131.563f	6091.62	-122827	45.12	20.47
115	136.388f	5679.15	-95345	42.07	15.89
116	141.213f	6282.39	-66370	46.54	11.06
117	146.038f	5775.49	-36117	43.65	6.02
118	148.613f	4307.36	-23117	36.96	3.85
119	151.188f	2994.76	-13701	29.72	2.28
120	153.763f	1852.65	-7448	21.80	1.24

Longitudinal Strength At Sea Condition (zero)

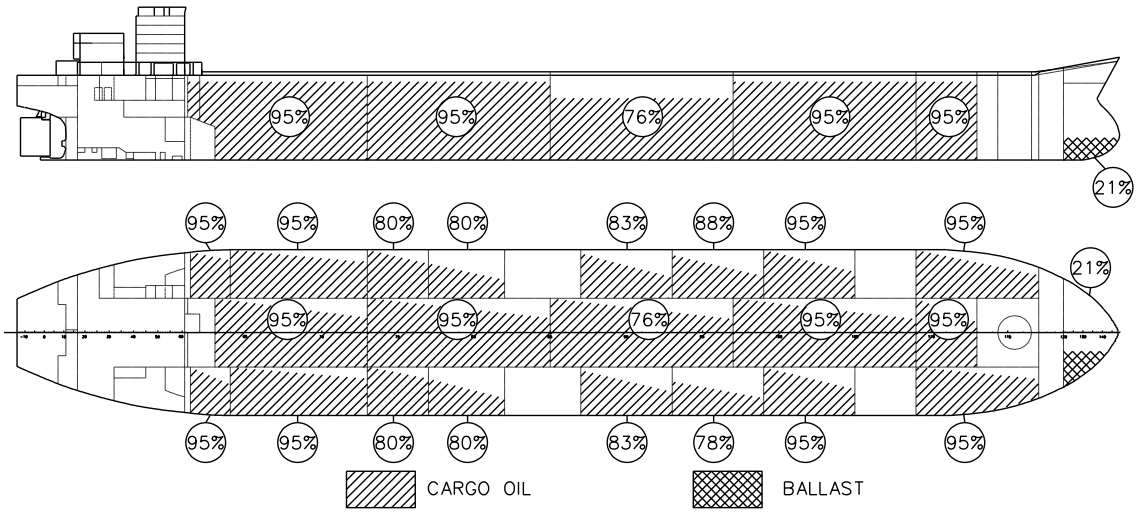
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	-51.12	-1159	1.60	0.82
61	120.782a	-10352.18	-146177	76.68	24.36
64	106.502a	-9504.98	-297776	76.10	49.63
73	63.662a	157.52	-495259	1.17	82.54
77	44.622a	2533.80	-469708	18.77	78.28
82	20.822a	5993.19	-368986	44.39	61.50
85	6.542a	-272.07	-327881	2.02	54.65
87	2.978f	-5331.92	-354407	39.50	59.07
93	31.538f	-2713.66	-469330	20.10	78.22
97	50.578f	-823.21	-502144	6.10	83.69
99	60.098f	1031.39	-500976	7.64	83.50
105	88.658f	9420.31	-351375	69.78	58.56
109	107.698f	1820.15	-244134	13.48	40.69
113	126.738f	7317.07	-155282	54.20	25.88
114*	133.525f	5593.00	-111339	41.43	18.56
115	136.388f	5679.15	-95345	42.07	15.89
116	141.213f	6282.39	-66370	46.54	11.06
116*	144.075f	6341.15	-48064	47.54	8.01
117	146.038f	5775.49	-36117	43.65	6.02
120	153.763f	1852.65	-7448	21.80	1.24

Max. Shear	-11076.83 MT	at	116.022a		84.15%Max
Max. Bending Moment	-503767 MT-m	at	55.338f	(Sagging)	83.96%Max

Longitudinal Strength At Sea Condition



Condition no.3: MAXIMUM LOADED – 10% CONSUMABLES



Floating Status

Draft FP	19.670m	Heel	stbd 0.18 deg.	GM(Solid)	7.915m
Draft MS	20.639m	Equil	Yes	F/S Corr	1.015m
Draft AP	21.608m	Wind	0.0 kn	GM(Fluid)	6.900m
Trim	aft 1.94/329.18	Wave	No	KMT	21.313 m
LCG	5.164f	VCG	13.398 m	TPcm	159.85

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	259,042.39	7.090f	0.051p	12.607
Displacement	304,492.41	5.164f	0.024s	13.398

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	382.67	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	2.40	131.422a	7.400p	29.100
RISERS	45.82	138.554f	0.000	-2.570
Total Fixed	**47,133.00**	**4.644a**	**0.550s**	**18.119**

Tank Status

WATER BALLAST (SpGr 1.025)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
FORE PEAK	21.00%	942.79	158.989f	0.021s	3.663	6,369.45
Subtotals:		**942.79**	**158.989f**	**0.021s**	**3.663**	**6,369.45**

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	94.99%	10,860.27	124.724f	17.114p	13.689	7,811.60
N1A C O T.S	94.99%	10,860.25	124.722f	17.119s	13.689	7,816.72
N1 C O T .C	95.00%	9,806.85	117.211f	0.005s	13.075	14,526.71
N2 C O T .C	95.00%	29,417.58	79.077f	0.005s	13.075	43,575.98
N3 C O T .C	75.97%	23,523.92	21.941f	0.006s	10.456	43,575.75
N4 C O T .C	95.00%	29,417.59	35.163a	0.005s	13.075	43,575.98
N5 C O T .C	95.00%	26,710.62	89.847a	0.042s	13.502	42,316.20
N2A COT_SEP.P	95.00%	10,099.51	74.362f	18.326p	12.860	7,521.40
N2A COT_SEP.S	95.00%	10,099.51	74.362f	18.331s	12.860	7,521.37
N3 C O T.P	87.80%	9,334.34	45.801f	18.326p	11.888	7,520.78
N3 C O T.S	77.80%	8,271.20	45.799f	18.329s	10.540	7,520.84
N3A C O T.P	82.50%	8,770.87	17.240f	18.324p	11.173	7,520.81
N3A C O T.S	82.50%	8,770.87	17.240f	18.330s	11.173	7,520.77
N4 COT_SEP.P	80.00%	7,087.34	32.735a	18.324p	10.836	6,267.11
N4 COT_SEP.S	80.00%	7,087.34	32.735a	18.329s	10.836	6,267.12
N4A C O T.P	80.00%	5,654.43	54.150a	18.324p	10.836	5,000.03
N4A C O T.S	80.00%	5,654.43	54.150a	18.329s	10.836	5,000.05
N5 C O T.P	95.00%	13,962.21	84.194a	17.878p	13.562	11,159.04
N5 C O T.S	95.00%	13,962.20	84.194a	17.883s	13.562	11,160.46
SLOP TANK.P	95.00%	3,259.76	113.037a	16.596p	16.127	3,314.02
SLOP TANK.S	95.00%	3,259.72	113.036a	16.602s	16.127	3,318.67
Subtotals:		**255,870.80**	**6.695f**	**0.069p**	**12.566**	**299,811.44**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.158a	2.766p	0.786	174.03
DRAIN TK.C	50.00%	30.21	144.351a	0.007s	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.567a	13.335p	8.255	128.29
SEWAGE.S	50.00%	132.51	123.566a	13.341s	8.255	129.01
Subtotals:		**343.06**	**126.734a**	**0.383p**	**6.673**	**499.24**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	7.23%	21.80	156.695a	8.584p	23.439	1,025.47
POTABLE W.S	6.53%	21.80	156.857a	8.421s	23.421	1,253.73
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**65.96**	**153.720a**	**3.968s**	**22.606**	**2,279.21**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	14.72%	15.01	122.688a	12.819p	19.269	18.67
DO SETTLING 1	10.51%	15.01	127.260a	12.817p	19.110	26.14
DO DAILY.P	98.00%	80.06	131.423a	12.822p	22.434	14.95
Subtotals:		**110.09**	**129.664a**	**12.821p**	**21.549**	**59.76**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.723a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.723a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	2316.9	3.5	13.8	5260
ACOMODATIONS	311.4	16.7	26.9	1672
ACOMOD AFT	171.7	12.5	22.8	709
HELIDECK	33.5	18.9	29.1	230
V-533603	15.3	9.0	19.3	24
V-533604A	15.3	9.0	19.3	24
MODULE M01,M02,M04 (base)	123.5	12.9	23.2	614
MODULE M01	179.3	15.5	25.8	419
MODULE M02	163.6	15.6	25.9	383
MODULE M04	251.1	17.7	28.0	1401
MODULE M03(base)	37.9	11.1	21.4	173
MODULE M03	250.7	21.5	31.8	722
VE SKID SUP.P	46.7	13.8	24.1	278
SKID FORE.P	71.0	11.4	21.6	380
CRANE CV77.S	107.9	15.2	25.4	679
CRANE CV69.P	107.3	15.0	25.3	671
CRANE CV109.P	105.3	15.4	25.7	735
TURRET	442.2	18.6	28.9	3473
LAYDOW AREA	38.1	10.3	20.6	168
CO2 ROOM.S	21.7	8.2	18.5	73
V-541202	26.4	10.4	20.7	45
Fender	55.6	8.6	18.8	69
Total	**4892.4**			**18203**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	18203.0s
80.000s	18203.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.34a	20.639	-0.081	0.000	9.406 (1)	
5.00s	0.33a	20.557	0.524	0.019	7.781 (1)	
10.00s	0.31a	20.300	1.154	0.092	6.138 (1)	
20.00s	0.27a	19.553	2.242	0.399	2.484 (1)	
25.76s	0.24a	19.210	2.546	0.641	-0.001 (1)	FldPt
30.00s	0.21a	18.979	2.672	0.835	-1.973 (1)	
38.75s	0.13a	18.524	2.753	1.252	-6.965 (1)	MaxRa
40.00s	0.12a	18.467	2.747	1.312	-6.971 (1)	
50.00s	0.01a	17.835	2.615	1.783	-12.163 (1)	
60.00s	0.09f	16.790	2.188	2.206	-17.135 (1)	
65.00s	0.13f	16.087	1.884	2.384	-19.454 (1)	
70.00s	0.18f	15.271	1.525	2.534	-21.635 (1)	
75.00s	0.22f	14.348	1.117	2.649	-23.660 (1)	
80.00s	0.26f	13.323	0.656	2.727	-25.511 (1)	

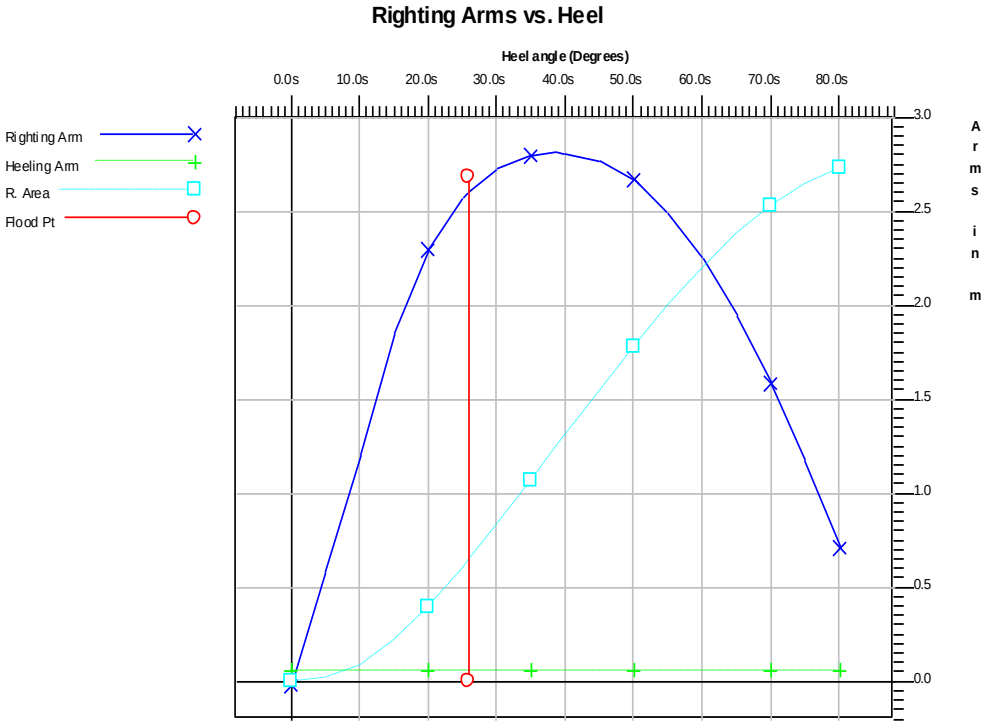
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	9.406

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	24.857	23.457	Yes



Longitudinal Strength At Sea Condition (stbd 0.18 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	-481.46	-1396	15.07	0.98
20	151.942a	-808.79	-2831	20.75	1.63
24	148.902a	-1310.05	-5963	27.10	2.78
28	145.862a	-1958.13	-10843	33.93	4.23
32	142.822a	-2748.10	-17897	40.97	6.00
36	139.782a	-3748.63	-27685	49.03	8.15
40	136.742a	-4954.35	-40814	57.73	10.70
44	133.702a	-6111.55	-57939	64.21	13.70
48	130.662a	-7221.89	-77827	69.07	16.75
52	127.622a	-8504.15	-101630	74.65	20.07
56	124.582a	-9814.43	-129446	79.60	23.62
60	121.542a	-11177.05	-161293	84.25	27.36
61	120.782a	-11321.10	-169829	83.86	28.30
62	116.022a	-11976.47	-226017	90.98	37.67
63	111.262a	-11468.52	-282189	89.41	47.03
64	106.502a	-10266.36	-333854	82.20	55.64
65	101.742a	-9100.84	-379870	72.22	63.31
66	96.982a	-7949.74	-420377	62.53	70.06
67	92.222a	-6808.98	-455429	53.08	75.90
68	87.462a	-5678.15	-485076	43.88	80.85
69	82.702a	-4510.37	-509307	34.56	84.88
70	77.942a	-3349.76	-527888	25.45	87.98
71	73.182a	-2239.65	-541120	16.87	90.19
72	68.422a	-1132.40	-549064	8.46	91.51
73	63.662a	-25.91	-551764	0.19	91.96
74	58.902a	599.56	-550330	4.44	91.72
75	54.142a	1227.12	-545914	9.09	90.99
76	49.382a	1856.78	-538507	13.75	89.75
77	44.622a	2534.19	-528042	18.77	88.01
78	39.862a	3237.74	-514182	23.98	85.70
79	35.102a	3897.93	-497131	28.87	82.86
80	30.342a	4644.82	-476784	34.41	79.46
81	25.582a	5420.06	-452760	40.15	75.46
82	20.822a	6192.11	-425052	45.87	70.84
83	16.062a	4137.25	-400399	30.65	66.73
84	11.302a	2082.94	-385526	15.43	64.25
85	6.542a	29.19	-380431	0.22	63.41
86	1.782a	-2485.61	-386210	18.41	64.37
87	2.978f	-4989.62	-403935	36.96	67.32
88	7.738f	-4552.50	-426578	33.72	71.10
89	12.498f	-4110.64	-447130	30.45	74.52
90	17.258f	-3664.03	-465566	27.14	77.59
91	22.018f	-3212.68	-481865	23.80	80.31
92	26.778f	-2752.68	-496004	20.39	82.67
93	31.538f	-2281.42	-507916	16.90	84.65
94	36.298f	-1782.93	-517518	13.21	86.25
95	41.058f	-1289.95	-524760	9.56	87.46
96	45.818f	-802.47	-529669	5.94	88.28
97	50.578f	-363.36	-532324	2.69	88.72
98	55.338f	559.55	-531789	4.14	88.63
99	60.098f	1484.55	-526855	11.00	87.81
100	64.858f	2866.26	-516432	21.23	86.07

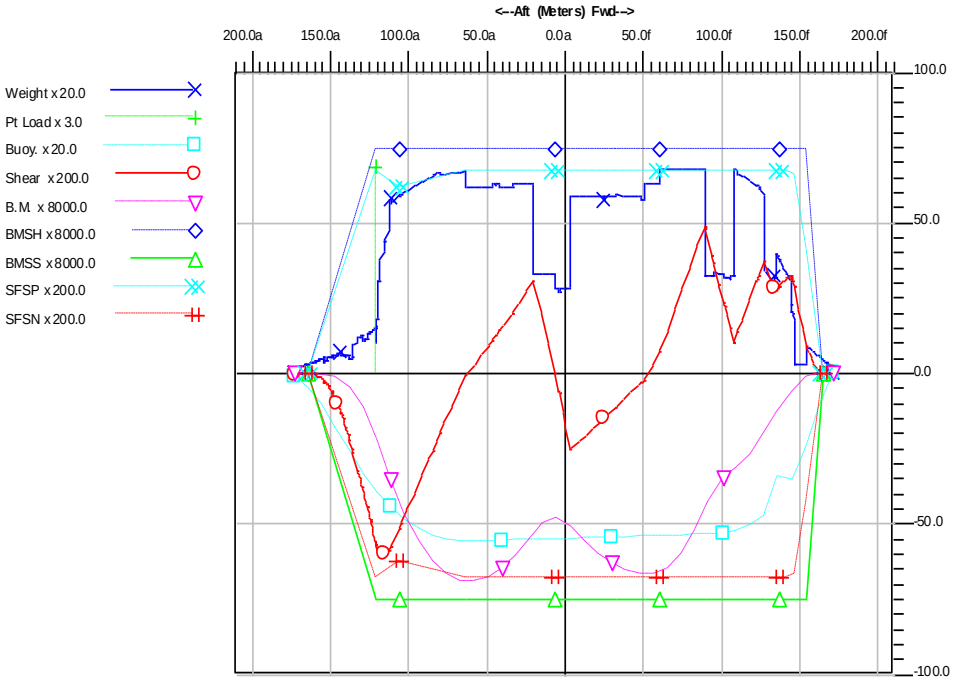
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
101	69.618f	4250.05	-499427	31.48	83.24
102	74.378f	5635.92	-475830	41.75	79.31
103	79.138f	7023.88	-445632	52.03	74.27
104	83.898f	8413.98	-408821	62.33	68.14
105	88.658f	9806.35	-365389	72.64	60.90
106	93.418f	7855.16	-323289	58.19	53.88
107	98.178f	5979.97	-290343	44.30	48.39
108	102.938f	4066.62	-266315	30.12	44.39
109	107.698f	2133.50	-251547	15.80	41.92
110	112.458f	3562.28	-237863	26.39	39.64
111	117.218f	4924.41	-217585	36.48	36.26
112	121.978f	6259.13	-190887	46.36	31.81
113	126.738f	7504.31	-158028	55.59	26.34
114	131.563f	6246.03	-124773	46.27	20.80
115	136.388f	5803.35	-96645	42.99	16.11
116	141.213f	6382.56	-67153	47.28	11.19
117	146.038f	5849.50	-36501	44.21	6.08
118	148.613f	4365.41	-23344	37.46	3.89
119	151.188f	3038.08	-13810	30.15	2.30
120	153.763f	1882.86	-7476	22.15	1.25

Longitudinal Strength At Sea Condition (stbd 0.18 deg.)

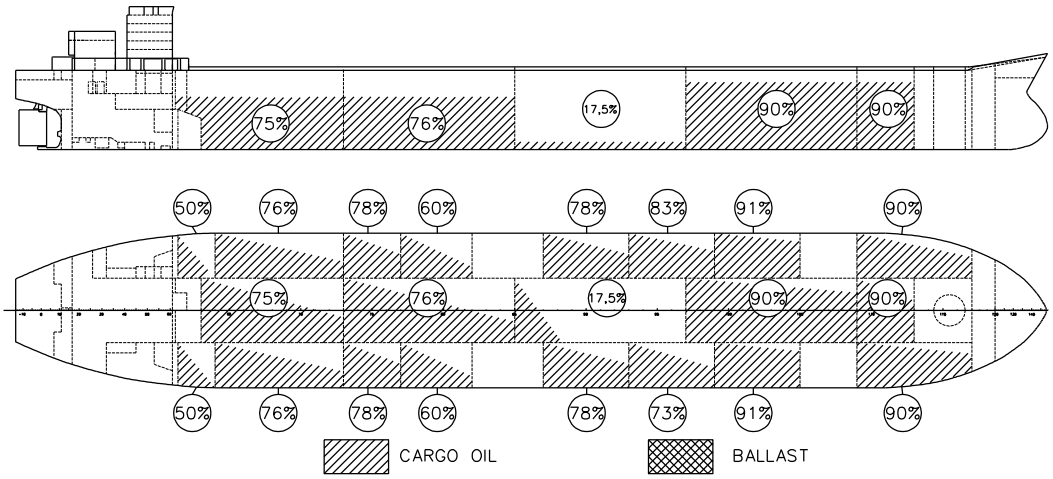
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	-481.46	-1396	15.07	0.98
61	120.782a	-11321.10	-169829	83.86	28.30
64	106.502a	-10266.36	-333854	82.20	55.64
73	63.662a	-25.91	-551764	0.19	91.96
77	44.622a	2534.19	-528042	18.77	88.01
82	20.822a	6192.11	-425052	45.87	70.84
85	6.542a	29.19	-380431	0.22	63.41
87	2.978f	-4989.62	-403935	36.96	67.32
93	31.538f	-2281.42	-507916	16.90	84.65
97	50.578f	-363.36	-532324	2.69	88.72
99	60.098f	1484.55	-526855	11.00	87.81
105	88.658f	9806.35	-365389	72.64	60.90
109	107.698f	2133.50	-251547	15.80	41.92
113	126.738f	7504.31	-158028	55.59	26.34
114*	133.525f	5734.12	-113004	42.47	18.83
115	136.388f	5803.35	-96645	42.99	16.11
116	141.213f	6382.56	-67153	47.28	11.19
116*	144.075f	6426.69	-48596	48.18	8.10
117	146.038f	5849.50	-36501	44.21	6.08
120	153.763f	1882.86	-7476	22.15	1.25

Max. Shear	-11976.48 MT	at	116.022a		90.98%Max
Max. Bending Moment	-551764 MT-m	at	63.662a	(Sagging)	91.96%Max

Longitudinal Strength At Sea Condition



Condition no.4: 80% OFFLOADING – 100% CONSUMABLES



Floating Status

Draft FP	17.186m	Heel	0.01 deg.	GM(Solid)	8.927m
Draft MS	17.634m	Equil	Yes	F/S Corr	1.157m
Draft AP	18.081m	Wind	0.0 kn	GM(Fluid)	7.770m
Trim	aft 0.90/329.18	Wave	No	KMT	21.346 m
LCG	7.779f	VCG	12.418 m	TPcm	156.27

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	211,481.75	10.700f	0.100p	11.239
Displacement	256,931.75	7.779f	0.002p	12.418

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	402.51	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	20.40	131.422a	7.400p	29.100
RISERS	46.50	138.554f	0.000	-2.570
Total Fixed	**47,171.54**	**4.630a**	**0.547s**	**18.114**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	89.69%	10,254.86	124.693f	17.086p	13.008	7,627.25
N1A C O T.S	89.69%	10,254.86	124.693f	17.086s	13.008	7,626.94
N1 C O T .C	89.70%	9,259.73	117.215f	0.000	12.346	14,526.30
N2 C O T .C	89.70%	27,776.41	79.108f	0.000	12.346	43,574.75
N3 C O T .C	17.54%	5,430.41	21.865f	0.001p	2.414	43,574.52
N4 C O T .C	76.30%	23,626.97	35.137a	0.000	10.502	43,574.75
N5 C O T .C	75.20%	21,143.59	89.467a	0.028s	10.835	42,315.13
N2A COT_SEP.P	91.40%	9,716.79	74.370f	18.328p	12.374	7,521.24
N2A COT_SEP.S	91.40%	9,716.80	74.370f	18.328s	12.375	7,521.19
N3 C O T.P	82.70%	8,792.14	45.810f	18.327p	11.200	7,520.55
N3 C O T.S	72.70%	7,729.00	45.809f	18.325s	9.852	7,520.58
N3A C O T.P	77.70%	8,260.57	17.249f	18.326p	10.526	7,520.62
N3A C O T.S	77.70%	8,260.57	17.249f	18.326s	10.526	7,520.57
N4 COT_SEP.P	60.00%	5,315.51	32.730a	18.321p	8.140	6,266.94
N4 COT_SEP.S	60.00%	5,315.51	32.730a	18.321s	8.140	6,266.93
N4A C O T.P	77.70%	5,491.86	54.146a	18.326p	10.526	4,999.89
N4A C O T.S	77.70%	5,491.87	54.146a	18.326s	10.526	4,999.89
N5 C O T.P	76.10%	11,184.32	83.972a	17.775p	11.116	10,938.44
N5 C O T.S	76.10%	11,184.32	83.972a	17.775s	11.116	10,938.24
SLOP TANK.P	50.00%	1,715.72	112.615a	15.689p	10.924	2,163.57
SLOP TANK.S	50.00%	1,715.70	112.615a	15.689s	10.924	2,163.33
Subtotals:		**207,637.50**	**12.120f**	**0.091p**	**11.037**	**296,681.59**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.145a	2.779p	0.786	175.69
DRAIN TK.C	50.00%	30.21	144.346a	0.000	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.564a	13.338p	8.255	128.69
SEWAGE.S	50.00%	132.51	123.564a	13.338s	8.255	128.66
Subtotals:		**343.06**	**126.730a**	**0.388p**	**6.673**	**500.95**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	100.00%	301.39	156.725a	9.274p	25.423	0.00
POTABLE W.S	100.00%	333.92	156.834a	8.760s	25.421	0.00
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**657.67**	**156.476a**	**0.602s**	**25.271**	**0.00**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	98.00%	99.98	122.682a	12.823p	22.434	18.67
DO SETTLING 1	98.00%	139.97	127.243a	12.823p	22.434	26.14
DO DAILY.P	98.00%	80.06	131.422a	12.823p	22.434	14.95
DO STORAGE.P	97.98%	517.29	141.432a	13.613p	23.178	86.39
DO STORAGE.S	98.00%	258.02	137.885a	12.540s	22.974	31.25
Subtotals:		**1,095.32**	**136.340a**	**7.221p**	**22.913**	**177.39**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.722a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.722a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	3355.7	5.1	13.8	7629
ACOMODATIONS	311.4	19.8	28.5	1771
ACOMOD AFT	171.7	15.6	24.4	834
HELIDECK	33.5	22.0	30.7	243
V-533603	15.3	12.2	20.9	26
V-533604A	15.3	12.2	20.9	26
MODULE M01,M02,M04 (base)	123.5	16.0	24.8	721
MODULE M01	179.3	18.6	27.4	445
MODULE M02	163.6	18.7	27.4	407
MODULE M04	251.1	20.8	29.6	1481
MODULE M03(base)	37.9	14.2	22.9	186
MODULE M03	250.7	24.6	33.4	758
VE SKID SUP.P	46.7	16.9	25.7	326
SKID FORE.P	71.0	14.5	23.2	408
CRANE CV77.S	107.9	18.3	27.0	793
CRANE CV69.P	107.3	18.1	26.9	784
CRANE CV109.P	105.3	18.5	27.3	780
TURRET	442.2	21.7	30.5	3664
LAYDOW AREA	38.1	13.4	22.2	181
CO2 ROOM.S	21.7	11.3	20.0	79
V-541202	26.4	13.5	22.3	48
Fender	55.6	11.7	20.4	75
Total	**5931.2**			**21666**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	21666.0s
80.000s	21666.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.16a	17.634	-0.083	0.000	12.813 (1)	
5.00s	0.15a	17.562	0.598	0.022	11.178 (1)	
10.00s	0.13a	17.341	1.296	0.105	9.500 (1)	
20.00s	0.06a	16.466	2.827	0.462	6.049 (1)	
30.00s	0.06f	15.501	3.949	1.064	2.104 (1)	
34.78s	0.14f	15.096	4.262	1.407	-0.001 (1)	FldPt
40.00s	0.22f	14.634	4.432	1.804	-2.383 (1)	
41.34s	0.24f	14.502	4.439	1.908	-4.677 (1)	MaxRa
50.00s	0.37f	13.482	4.198	2.567	-6.956 (1)	
60.00s	0.51f	11.962	3.460	3.241	-11.375 (1)	
70.00s	0.62f	10.098	2.349	3.753	-15.485 (1)	
75.00s	0.67f	9.055	1.669	3.929	-17.384 (1)	
80.00s	0.70f	7.944	0.925	4.043	-19.158 (1)	

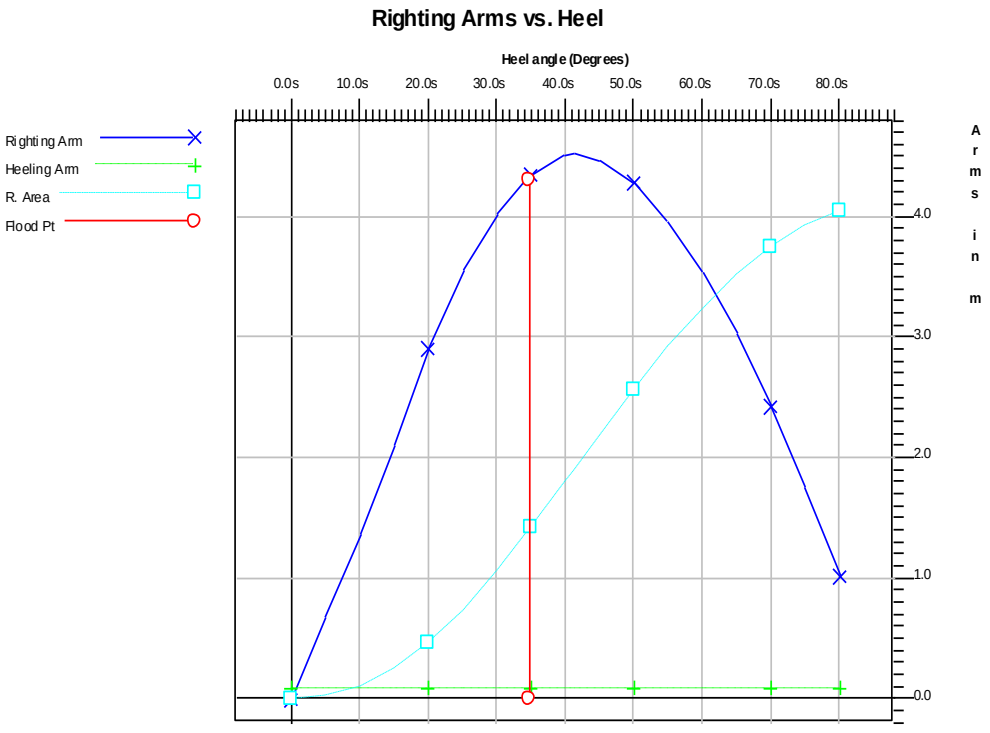
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	12.813

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	28.489	27.089	Yes



Longitudinal Strength At Sea Condition (0.01 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1283.24	9248	40.16	6.51
20	151.942a	1171.01	12063	30.04	6.96
24	148.902a	977.86	15389	20.23	7.16
28	145.862a	741.42	17999	12.85	7.02
32	142.822a	482.96	19925	7.20	6.68
36	139.782a	18.37	20747	0.24	6.11
40	136.742a	-631.88	19886	7.36	5.21
44	133.702a	-1199.99	17070	12.61	4.03
48	130.662a	-1844.11	12505	17.64	2.69
52	127.622a	-2620.39	5773	23.00	1.14
56	124.582a	-3397.86	-3372	27.56	0.62
60	121.542a	-4220.02	-14916	31.81	2.53
61	120.782a	-4227.09	-18119	31.31	3.02
62	116.022a	-5368.96	-41542	40.79	6.92
63	111.262a	-5596.55	-68041	43.63	11.34
64	106.502a	-5146.68	-93576	41.21	15.60
65	101.742a	-4264.18	-115933	33.84	19.32
66	96.982a	-3393.10	-134121	26.69	22.35
67	92.222a	-2530.05	-148181	19.72	24.70
68	87.462a	-1675.53	-158154	12.95	26.36
69	82.702a	-782.85	-164023	6.00	27.34
70	77.942a	103.31	-165551	0.78	27.59
71	73.182a	938.70	-163036	7.07	27.17
72	68.422a	1770.79	-156544	13.23	26.09
73	63.662a	2601.72	-146113	19.27	24.35
74	58.902a	3461.44	-131650	25.64	21.94
75	54.142a	4322.83	-113091	32.02	18.85
76	49.382a	5185.89	-90428	38.41	15.07
77	44.622a	6096.28	-63598	45.16	10.60
78	39.862a	6396.04	-33780	47.38	5.63
79	35.102a	6652.03	-2693	49.27	0.45
80	30.342a	6994.30	29765	51.81	4.96
81	25.582a	7364.50	63974	54.55	10.66
82	20.822a	7731.12	99936	57.27	16.66
83	16.062a	5973.14	132586	44.25	22.10
84	11.302a	4213.31	156864	31.21	26.14
85	6.542a	2451.65	172760	18.16	28.79
86	1.782a	-815.66	176686	6.04	29.45
87	2.978f	-4074.59	165078	30.18	27.51
88	7.738f	-4569.80	144536	33.85	24.09
89	12.498f	-5060.68	121647	37.49	20.27
90	17.258f	-5547.23	96432	41.09	16.07
91	22.018f	-6029.46	68911	44.66	11.49
92	26.778f	-6503.46	39102	48.17	6.52
93	31.538f	-6966.61	7080	51.60	1.18
94	36.298f	-7425.48	-27137	55.00	4.52
95	41.058f	-7890.26	-63553	58.45	10.59
96	45.818f	-8360.96	-102195	61.93	17.03
97	50.578f	-8880.42	-143146	65.78	23.86
98	55.338f	-7562.44	-182248	56.02	30.37
99	60.098f	-6242.80	-215071	46.24	35.85

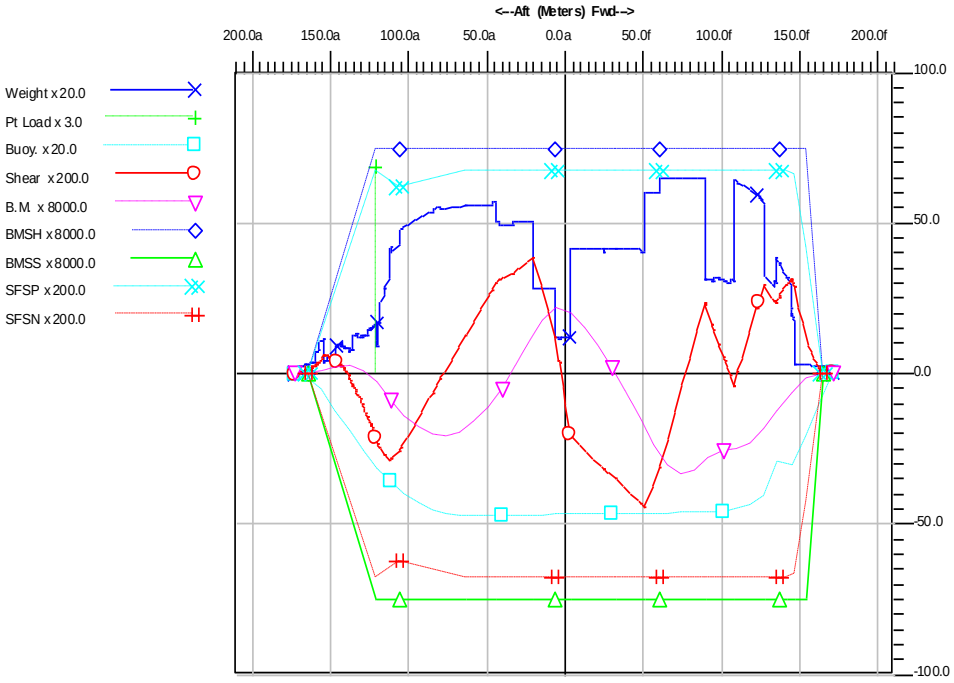
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	-4425.58	-240430	32.78	40.07
101	69.618f	-2606.70	-257134	19.31	42.86
102	74.378f	-786.14	-265176	5.82	44.20
103	79.138f	1036.08	-264549	7.67	44.09
104	83.898f	2860.02	-255244	21.19	42.54
105	88.658f	4685.82	-237252	34.71	39.54
106	93.418f	3288.20	-218243	24.36	36.37
107	98.178f	1964.22	-205759	14.55	34.29
108	102.938f	599.67	-199575	4.44	33.26
109	107.698f	-787.37	-200045	5.83	33.34
110	112.458f	995.66	-199455	7.38	33.24
111	117.218f	2706.89	-190597	20.05	31.77
112	121.978f	4383.80	-173673	32.47	28.95
113	126.738f	5961.55	-148980	44.16	24.83
114	131.563f	5162.19	-122091	38.24	20.35
115	136.388f	5120.51	-98198	37.93	16.37
116	141.213f	5994.85	-71312	44.41	11.89
117	146.038f	5791.75	-41812	43.78	6.97
118	148.613f	4538.10	-28522	38.94	4.75
119	151.188f	3417.10	-18291	33.91	3.05
120	153.763f	2475.88	-11330	29.13	1.89

Longitudinal Strength At Sea Condition (0.01 deg.)

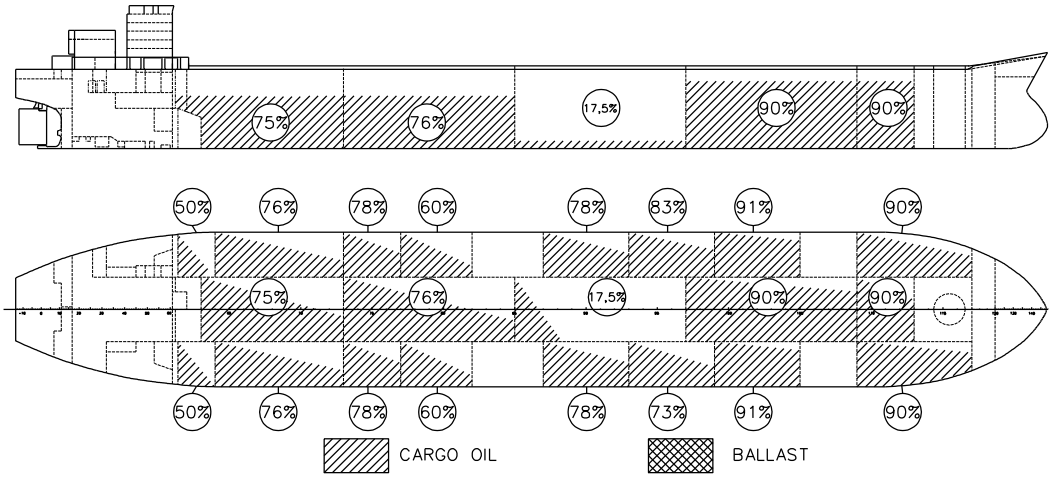
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1283.24	9248	40.16	6.51
61	120.782a	-4227.09	-18119	31.31	3.02
64	106.502a	-5146.68	-93576	41.21	15.60
73	63.662a	2601.72	-146113	19.27	24.35
77	44.622a	6096.28	-63598	45.16	10.60
82	20.822a	7731.12	99936	57.27	16.66
85	6.542a	2451.65	172760	18.16	28.79
87	2.978f	-4074.59	165078	30.18	27.51
93	31.538f	-6966.61	7080	51.60	1.18
97	50.578f	-8880.42	-143146	65.78	23.86
99	60.098f	-6242.80	-215071	46.24	35.85
105	88.658f	4685.82	-237252	34.71	39.54
109	107.698f	-787.37	-200045	5.83	33.34
113	126.738f	5961.55	-148980	44.16	24.83
114*	133.525f	4832.13	-112283	35.79	18.71
115	136.388f	5120.51	-98198	37.93	16.37
116	141.213f	5994.85	-71312	44.41	11.89
116*	144.075f	6220.77	-53632	46.63	8.94
117	146.038f	5791.75	-41812	43.78	6.97
120	153.763f	2475.88	-11330	29.13	1.89

Max. Shear	-8880.45 MT	at	50.578f	65.78%Max
Max. Bending Moment	-265176 MT-m	at	74.378f (Sagging)	44.20%Max

Longitudinal Strength At Sea Condition



Condition no.5: 80% OFFLOADING – 10% CONSUMABLES



Floating Status

Draft FP	17.417m	Heel	stbd 0.18 deg.	GM(Solid)	8.983m
Draft MS	17.531m	Equil	Yes	F/S Corr	1.173m
Draft AP	17.646m	Wind	0.0 kn	GM(Fluid)	7.810m
Trim	0.23/329.18	Wave	No	KMT	21.329 m
LCG	8.741f	VCG	12.346 m	TPcm	155.72

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	209,879.19	11.893f	0.065p	11.142
Displacement	255,329.19	8.741f	0.027s	12.346

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	400.73	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	2.40	131.422a	7.400p	29.100
RISERS	46.44	138.554f	0.000	-2.570
Total Fixed	**47,151.69**	**4.587a**	**0.550s**	**18.111**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	89.69%	10,254.86	124.705f	17.083p	13.008	7,625.71
N1A C O T.S	89.69%	10,254.85	124.703f	17.088s	13.008	7,631.41
N1 C O T .C	89.70%	9,259.73	117.217f	0.005s	12.346	14,526.46
N2 C O T .C	89.70%	27,776.41	79.130f	0.005s	12.346	43,575.21
N3 C O T .C	17.52%	5,424.67	21.979f	0.025s	2.411	43,574.99
N4 C O T .C	76.30%	23,626.98	35.111a	0.006s	10.501	43,575.21
N5 C O T .C	75.20%	21,143.59	89.441a	0.034s	10.835	42,315.60
N2A COT_SEP.P	91.40%	9,716.80	74.375f	18.325p	12.375	7,521.29
N2A COT_SEP.S	91.40%	9,716.80	74.375f	18.330s	12.374	7,521.27
N3 C O T.P	82.70%	8,792.14	45.816f	18.324p	11.200	7,520.64
N3 C O T.S	72.70%	7,729.00	45.816f	18.328s	9.852	7,520.64
N3A C O T.P	77.70%	8,260.57	17.256f	18.323p	10.526	7,520.64
N3A C O T.S	77.70%	8,260.57	17.256f	18.329s	10.526	7,520.65
N4 COT_SEP.P	60.00%	5,315.51	32.724a	18.317p	8.140	6,267.03
N4 COT_SEP.S	60.00%	5,315.51	32.724a	18.324s	8.140	6,266.99
N4A C O T.P	77.70%	5,491.87	54.143a	18.323p	10.526	4,999.97
N4A C O T.S	77.70%	5,491.86	54.143a	18.329s	10.526	4,999.94
N5 C O T.P	76.10%	11,184.31	83.956a	17.772p	11.116	10,934.90
N5 C O T.S	76.10%	11,184.31	83.955a	17.778s	11.116	10,937.97
SLOP TANK.P	50.00%	1,715.72	112.612a	15.686p	10.924	2,160.31
SLOP TANK.S	50.00%	1,715.70	112.611a	15.693s	10.924	2,166.40
Subtotals:		**207,631.78**	**12.137f**	**0.087p**	**11.037**	**296,683.25**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.140a	2.768p	0.786	174.49
DRAIN TK.C	50.00%	30.21	144.343a	0.007s	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.563a	13.335p	8.254	128.34
SEWAGE.S	50.00%	132.51	123.562a	13.341s	8.254	129.04
Subtotals:		**343.06**	**126.728a**	**0.383p**	**6.673**	**499.78**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	7.23%	21.80	156.655a	8.564p	23.438	1,025.26
POTABLE W.S	6.53%	21.80	156.809a	8.395s	23.421	1,253.45
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**65.96**	**153.691a**	**3.966s**	**22.606**	**2,278.71**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	14.72%	15.01	122.683a	12.819p	19.269	18.67
DO SETTLING 1	10.51%	15.01	127.244a	12.817p	19.110	26.14
DO DAILY.P	98.00%	80.06	131.422a	12.822p	22.434	14.95
Subtotals:		**110.09**	**129.660a**	**12.821p**	**21.549**	**59.76**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.722a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.722a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	3355.7	5.1	13.8	7629
ACOMODATIONS	311.4	19.8	28.5	1771
ACOMOD AFT	171.7	15.6	24.4	834
HELIDECK	33.5	22.0	30.7	243
V-533603	15.3	12.2	20.9	26
V-533604A	15.3	12.2	20.9	26
MODULE M01,M02,M04 (base)	123.5	16.0	24.8	721
MODULE M01	179.3	18.6	27.4	445
MODULE M02	163.6	18.7	27.4	407
MODULE M04	251.1	20.8	29.6	1481
MODULE M03(base)	37.9	14.2	22.9	186
MODULE M03	250.7	24.6	33.4	758
VE SKID SUP.P	46.7	16.9	25.7	326
SKID FORE.P	71.0	14.5	23.2	408
CRANE CV77.S	107.9	18.3	27.0	793
CRANE CV69.P	107.3	18.1	26.9	784
CRANE CV109.P	105.3	18.5	27.3	780
TURRET	442.2	21.7	30.5	3664
LAYDOW AREA	38.1	13.4	22.2	181
CO2 ROOM.S	21.7	11.3	20.0	79
V-541202	26.4	13.5	22.3	48
Fender	55.6	11.7	20.4	75
Total	**5931.2**			**21666**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	21666.0s
80.000s	21666.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.04a	17.530	-0.108	0.000	13.174 (1)	
5.00s	0.03a	17.458	0.576	0.020	11.539 (1)	
10.00s	0.02a	17.238	1.279	0.101	9.856 (1)	
15.00s	0.01f	16.873	2.020	0.245	8.137 (1)	
20.00s	0.05f	16.365	2.823	0.456	6.394 (1)	
30.00s	0.18f	15.389	3.981	1.061	2.481 (1)	
35.65s	0.28f	14.906	4.352	1.473	-0.001 (1)	FldPt
40.00s	0.35f	14.509	4.485	1.809	-1.965 (1)	
41.54s	0.38f	14.352	4.494	1.930	-4.229 (1)	MaxRa
50.00s	0.53f	13.339	4.259	2.581	-6.478 (1)	
60.00s	0.67f	11.801	3.525	3.267	-10.849 (1)	
70.00s	0.79f	9.927	2.413	3.790	-14.926 (1)	
80.00s	0.88f	7.767	0.986	4.091	-18.584 (1)	

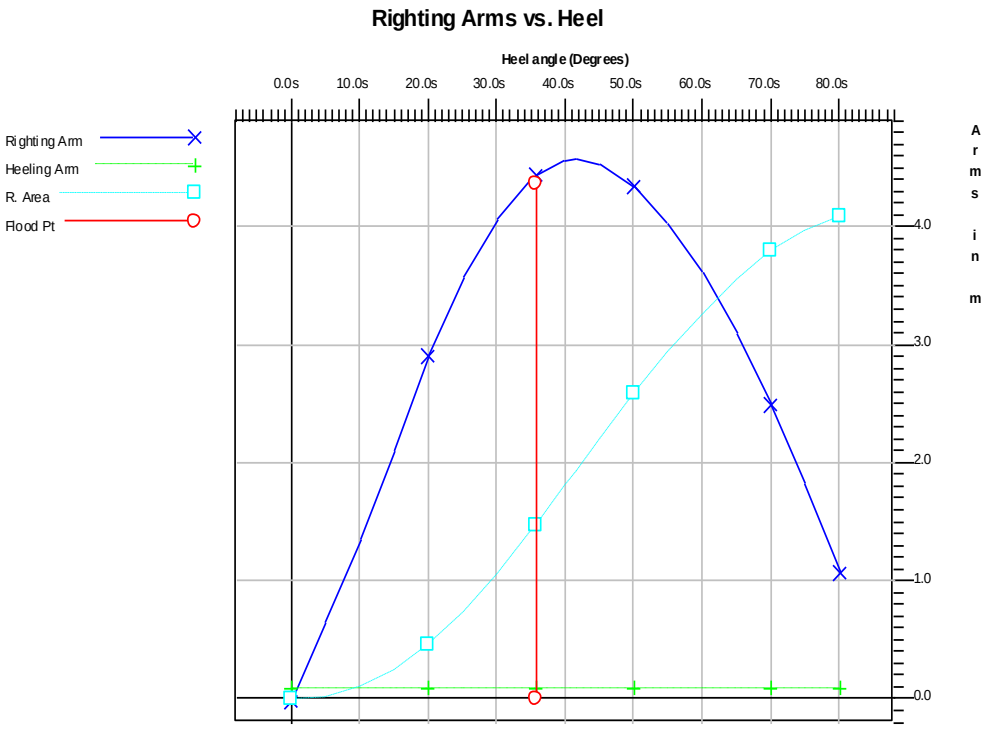
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	13.174

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	28.899	27.499	Yes



Longitudinal Strength At Sea Condition (stbd 0.18 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	796.52	8403	24.93	5.92
20	151.942a	705.80	10120	18.11	5.84
24	148.902a	543.74	12063	11.25	5.61
28	145.862a	260.96	13328	4.52	5.20
32	142.822a	-138.01	13569	2.06	4.55
36	139.782a	-723.81	12302	9.47	3.62
40	136.742a	-1493.06	8988	17.40	2.36
44	133.702a	-2191.89	3167	23.03	0.75
48	130.662a	-2828.70	-4263	27.05	0.92
52	127.622a	-3619.23	-14005	31.77	2.77
56	124.582a	-4423.23	-26245	35.88	4.79
60	121.542a	-5265.98	-40954	39.70	6.95
61	120.782a	-5278.03	-44957	39.10	7.49
62	116.022a	-6347.79	-73235	48.22	12.21
63	111.262a	-6503.20	-104247	50.70	17.37
64	106.502a	-5978.92	-133947	47.87	22.32
65	101.742a	-5027.48	-160126	39.89	26.69
66	96.982a	-4086.44	-181806	32.14	30.30
67	92.222a	-3152.78	-199024	24.58	33.17
68	87.462a	-2227.38	-211816	17.21	35.30
69	82.702a	-1263.76	-220169	9.68	36.69
70	77.942a	-306.73	-223841	2.33	37.31
71	73.182a	599.30	-223135	4.51	37.19
72	68.422a	1501.76	-218115	11.22	36.35
73	63.662a	2402.80	-208823	17.80	34.80
74	58.902a	3313.60	-195211	24.55	32.54
75	54.142a	4225.81	-177259	31.30	29.54
76	49.382a	5139.42	-154962	38.07	25.83
77	44.622a	6100.08	-128258	45.19	21.38
78	39.862a	6444.14	-98341	47.73	16.39
79	35.102a	6744.17	-66945	49.96	11.16
80	30.342a	7130.20	-33969	52.82	5.66
81	25.582a	7543.91	965	55.88	0.16
82	20.822a	7953.76	37860	58.92	6.31
83	16.062a	6234.94	71639	46.18	11.94
84	11.302a	4512.75	97228	33.43	16.20
85	6.542a	2787.17	114612	20.65	19.10
86	1.782a	-456.90	120166	3.38	20.03
87	2.978f	-3694.14	110293	27.36	18.38
88	7.738f	-4172.35	91577	30.91	15.26
89	12.498f	-4646.49	70595	34.42	11.77
90	17.258f	-5116.58	47366	37.90	7.89
91	22.018f	-5582.60	21909	41.35	3.65
92	26.778f	-6040.67	-5760	44.75	0.96
93	31.538f	-6488.15	-35566	48.06	5.93
94	36.298f	-6939.21	-67512	51.40	11.25
95	41.058f	-7396.46	-101620	54.79	16.94
96	45.818f	-7859.90	-137919	58.22	22.99
97	50.578f	-8372.37	-176493	62.02	29.42
98	55.338f	-7058.02	-213209	52.28	35.53
99	60.098f	-5742.27	-243666	42.54	40.61

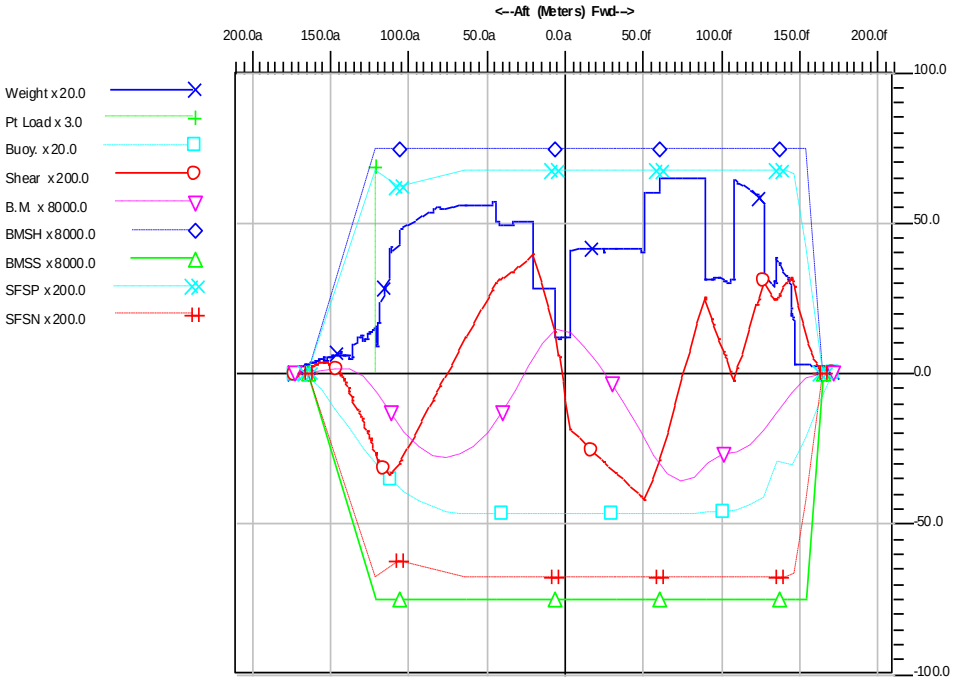
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	-3936.82	-266694	29.16	44.45
101	69.618f	-2129.97	-281125	15.78	46.85
102	74.378f	-321.71	-286953	2.38	47.83
103	79.138f	1487.94	-284169	11.02	47.36
104	83.898f	3299.05	-272768	24.44	45.46
105	88.658f	5111.75	-252743	37.86	42.12
106	93.418f	3696.32	-231773	27.38	38.63
107	98.178f	2352.98	-217417	17.43	36.24
108	102.938f	967.55	-209456	7.17	34.91
109	107.698f	-441.89	-208252	3.27	34.71
110	112.458f	1306.04	-206126	9.67	34.35
111	117.218f	2982.26	-195899	22.09	32.65
112	121.978f	4624.41	-177771	34.25	29.63
113	126.738f	6167.92	-152040	45.69	25.34
114	131.563f	5332.48	-124268	39.50	20.71
115	136.388f	5257.65	-99662	38.95	16.61
116	141.213f	6105.63	-72204	45.23	12.03
117	146.038f	5873.81	-42261	44.40	7.04
118	148.613f	4602.64	-28796	39.50	4.80
119	151.188f	3465.48	-18433	34.39	3.07
120	153.763f	2510.38	-11388	29.53	1.90

Longitudinal Strength At Sea Condition (stbd 0.18 deg.)

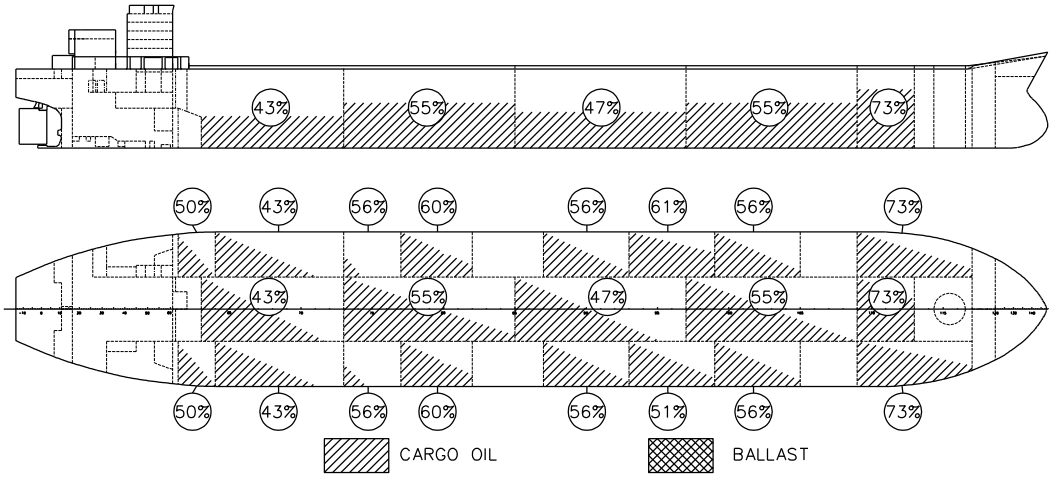
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	796.52	8403	24.93	5.92
61	120.782a	-5278.03	-44957	39.10	7.49
64	106.502a	-5978.92	-133947	47.87	22.32
73	63.662a	2402.80	-208823	17.80	34.80
77	44.622a	6100.08	-128258	45.19	21.38
82	20.822a	7953.76	37860	58.92	6.31
85	6.542a	2787.17	114612	20.65	19.10
87	2.978f	-3694.14	110293	27.36	18.38
93	31.538f	-6488.15	-35566	48.06	5.93
97	50.578f	-8372.37	-176493	62.02	29.42
99	60.098f	-5742.27	-243666	42.54	40.61
105	88.658f	5111.75	-252743	37.86	42.12
109	107.698f	-441.89	-208252	3.27	34.71
113	126.738f	6167.92	-152040	45.69	25.34
114*	133.525f	4987.83	-114150	36.95	19.03
115	136.388f	5257.65	-99662	38.95	16.61
116	141.213f	6105.63	-72204	45.23	12.03
116*	144.075f	6315.51	-54244	47.34	9.04
117	146.038f	5873.81	-42261	44.40	7.04
120	153.763f	2510.38	-11388	29.53	1.90

Max. Shear	-8372.39 MT	at	50.578f	62.02%Max
Max. Bending Moment	-286953 MT-m	at	74.378f (Sagging)	47.83%Max

Longitudinal Strength At Sea Condition



Condition no.6: 60% OFFLOADING – 100% CONSUMABLES



Floating Status

Draft FP	13.844m	Heel	0.03 deg.	GM(Solid)	11.893m
Draft MS	14.271m	Equil	Yes	F/S Corr	1.431m
Draft AP	14.697m	Wind	0.0 kn	GM(Fluid)	10.462m
Trim	aft 0.85/329.18	Wave	No	KMT	22.288 m
LCG	9.008f	VCG	10.394 m	TPcm	151.93

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	159,667.78	13.227f	0.137p	8.256
Displacement	205,117.80	9.008f	0.006p	10.394

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	428.28	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	20.40	131.422a	7.400p	29.100
RISERS	47.41	138.554f	0.000	-2.570
Total Fixed	**47,198.20**	**4.549a**	**0.546s**	**18.103**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	72.60%	8,300.55	124.554f	16.994p	10.782	7,143.04
N1A C O T.S	72.60%	8,300.55	124.555f	16.993s	10.782	7,142.44
N1 C O T .C	72.60%	7,494.50	117.214f	0.001p	9.992	14,526.30
N2 C O T .C	55.30%	17,124.14	79.092f	0.001p	7.611	43,574.74
N3 C O T .C	47.42%	14,683.79	21.964f	0.001p	6.527	43,574.52
N4 C O T .C	55.30%	17,124.14	35.148a	0.001p	7.611	43,574.74
N5 C O T .C	43.33%	12,183.98	88.260a	0.000	6.398	41,203.87
N2A COT_SEP.P	56.20%	5,974.66	74.365f	18.318p	7.629	7,521.18
N2A COT_SEP.S	56.20%	5,974.66	74.365f	18.317s	7.629	7,521.19
N3 C O T.P	61.20%	6,506.40	45.807f	18.322p	8.302	7,520.56
N3 C O T.S	51.20%	5,443.26	45.805f	18.316s	6.953	7,520.58
N3A C O T.P	56.20%	5,974.83	17.246f	18.320p	7.627	7,520.56
N3A C O T.S	56.20%	5,974.83	17.246f	18.318s	7.627	7,520.57
N4 COT_SEP.P	60.00%	5,315.51	32.730a	18.321p	8.140	6,266.94
N4 COT_SEP.S	60.00%	5,315.51	32.730a	18.320s	8.140	6,266.96
N4A C O T.P	56.20%	3,972.24	54.147a	18.320p	7.627	4,999.90
N4A C O T.S	56.20%	3,972.24	54.147a	18.318s	7.627	4,999.89
N5 C O T.P	43.31%	6,364.84	83.379a	17.470p	6.749	10,055.15
N5 C O T.S	43.31%	6,364.84	83.379a	17.468s	6.749	10,054.12
SLOP TANK.P	50.00%	1,715.72	112.615a	15.690p	10.924	2,163.91
SLOP TANK.S	50.00%	1,715.70	112.615a	15.689s	10.924	2,162.97
Subtotals:		**155,796.89**	**15.161f**	**0.126p**	**7.914**	**292,834.16**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.145a	2.780p	0.786	175.86
DRAIN TK.C	50.00%	30.21	144.346a	0.001p	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.564a	13.338p	8.255	128.73
SEWAGE.S	50.00%	132.51	123.564a	13.337s	8.255	128.62
Subtotals:		**343.06**	**126.730a**	**0.388p**	**6.673**	**501.11**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	100.00%	301.39	156.725a	9.274p	25.423	0.00
POTABLE W.S	100.00%	333.92	156.834a	8.760s	25.421	0.00
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**657.67**	**156.476a**	**0.602s**	**25.271**	**0.00**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	98.00%	99.98	122.682a	12.823p	22.434	18.67
DO SETTLING 1	98.00%	139.97	127.243a	12.823p	22.434	26.14
DO DAILY.P	98.00%	80.06	131.422a	12.823p	22.434	14.95
DO STORAGE.P	97.98%	517.29	141.431a	13.613p	23.178	86.09
DO STORAGE.S	98.00%	258.02	137.884a	12.540s	22.974	31.25
Subtotals:		**1,095.32**	**136.340a**	**7.221p**	**22.913**	**177.10**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.722a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.722a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	4466.8	6.8	13.8	10181
ACOMODATIONS	311.4	23.2	30.2	1877
ACOMOD AFT	171.7	18.0	26.1	893
HELIDECK	33.5	25.4	32.4	256
V-533603	15.3	15.5	22.6	31
V-533604A	15.3	15.5	22.6	31
MODULE M01,M02,M04 (base)	123.5	19.4	26.5	771
MODULE M01	179.3	22.2	29.1	472
MODULE M02	163.6	22.1	29.1	432
MODULE M04	251.1	24.2	31.3	1566
MODULE M03(base)	37.9	17.6	24.7	220
MODULE M03	250.7	28.0	35.1	797
VE SKID SUP.P	46.7	20.3	27.3	348
SKID FORE.P	71.0	17.9	24.9	482
CRANE CV77.S	107.9	21.7	28.7	843
CRANE CV69.P	107.3	21.5	28.6	834
CRANE CV109.P	105.3	21.9	29.0	829
TURRET	442.2	25.1	32.2	3870
LAYDOW AREA	38.1	16.8	23.9	215
CO2 ROOM.S	21.7	14.7	21.7	86
V-541202	26.4	16.9	24.0	57
Fender	55.6	15.1	22.1	81
Total	**7042.3**			**25173**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	25173.0s
80.000s	25173.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.15a	14.270	-0.118	0.000	16.195 (1)	
5.00s	0.14a	14.213	0.799	0.030	14.543 (1)	
10.00s	0.12a	14.031	1.735	0.140	12.822 (1)	
15.00s	0.10a	13.728	2.714	0.334	11.042 (1)	
20.00s	0.05a	13.305	3.761	0.616	9.218 (1)	
30.00s	0.06f	12.141	5.979	1.469	5.459 (1)	
40.00s	0.19f	10.720	6.790	2.608	1.464 (1)	
40.42s	0.20f	10.648	6.793	2.657	1.298 (1)	MaxRa
43.63s	0.24f	10.114	6.731	3.037	-0.001 (1)	FldPt
50.00s	0.31f	8.951	6.269	3.764	-2.570 (1)	
60.00s	0.41f	6.909	4.849	4.744	-6.539 (1)	
70.00s	0.49f	4.680	3.002	5.432	-10.349 (1)	
80.00s	0.54f	2.315	1.049	5.787	-13.883 (1)	

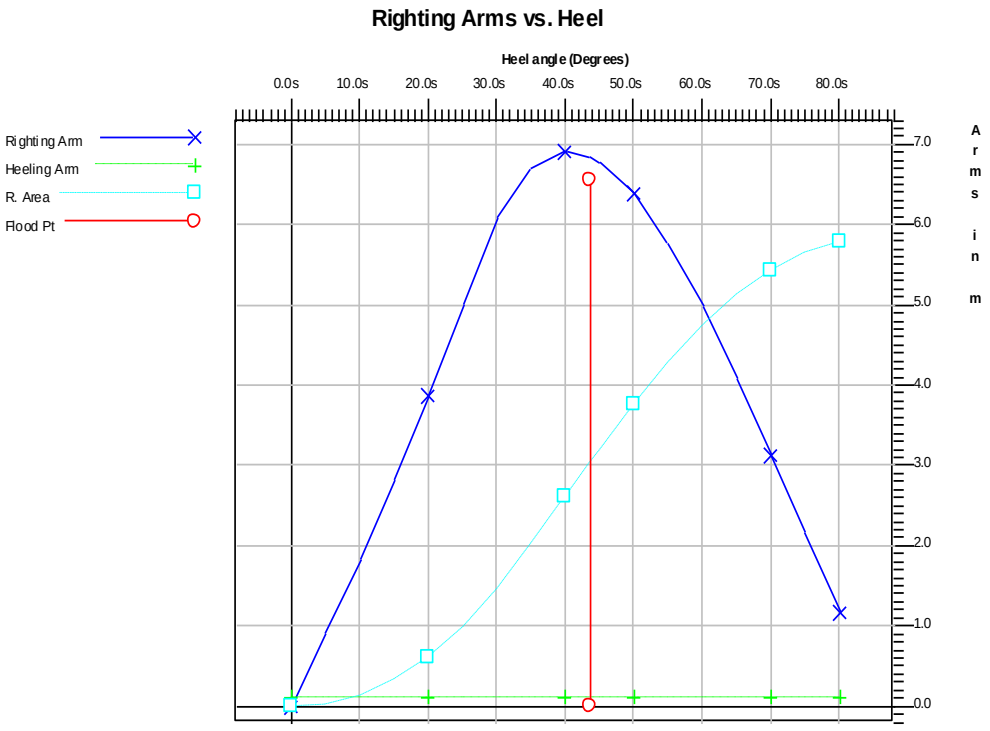
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	16.195

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	33.493	32.093	Yes



Longitudinal Strength At Sea Condition (0.03 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1816.30	12467	56.84	8.78
20	151.942a	1847.16	16652	47.39	9.61
24	148.902a	1870.23	22348	38.68	10.40
28	145.862a	1878.50	28030	32.55	10.93
32	142.822a	1893.17	33815	28.22	11.34
36	139.782a	1729.06	39367	22.62	11.59
40	136.742a	1405.37	44191	16.38	11.59
44	133.702a	1188.79	48089	12.49	11.37
48	130.662a	920.19	51345	8.80	11.05
52	127.622a	541.37	53610	4.75	10.59
56	124.582a	181.81	54701	1.47	9.98
60	121.542a	-204.29	54690	1.54	9.28
61	120.782a	-99.69	54580	0.74	9.10
62	116.022a	-926.25	51820	7.04	8.64
63	111.262a	-1175.98	46393	9.17	7.73
64	106.502a	-719.68	41896	5.76	6.98
65	101.742a	-807.32	38301	6.41	6.38
66	96.982a	-925.00	34211	7.28	5.70
67	92.222a	-1063.99	29508	8.30	4.92
68	87.462a	-1219.99	24102	9.43	4.02
69	82.702a	-1343.61	17974	10.29	3.00
70	77.942a	-1476.93	11342	11.22	1.89
71	73.182a	-1661.89	3897	12.52	0.65
72	68.422a	-1850.34	-4439	13.82	0.74
73	63.662a	-2040.14	-13673	15.11	2.28
74	58.902a	-1630.31	-22386	12.08	3.73
75	54.142a	-1218.82	-29144	9.03	4.86
76	49.382a	-805.68	-33939	5.97	5.66
77	44.622a	-345.21	-36710	2.56	6.12
78	39.862a	264.05	-36826	1.96	6.14
79	35.102a	829.53	-34200	6.14	5.70
80	30.342a	1481.26	-28731	10.97	4.79
81	25.582a	2160.92	-20037	16.01	3.34
82	20.822a	2836.96	-8117	21.01	1.35
83	16.062a	1388.16	1963	10.28	0.33
84	11.302a	-62.58	5142	0.46	0.86
85	6.542a	-1515.26	1411	11.22	0.24
86	1.782a	-3161.36	-9697	23.42	1.62
87	2.978f	-4799.18	-28622	35.55	4.77
88	7.738f	-4435.47	-50578	32.86	8.43
89	12.498f	-4067.44	-70793	30.13	11.80
90	17.258f	-3695.10	-89246	27.37	14.87
91	22.018f	-3318.45	-105917	24.58	17.65
92	26.778f	-2933.60	-120784	21.73	20.13
93	31.538f	-2537.90	-133781	18.80	22.30
94	36.298f	-2138.42	-144885	15.84	24.15
95	41.058f	-1744.88	-154102	12.93	25.68
96	45.818f	-1357.26	-161459	10.05	26.91
97	50.578f	-1018.46	-167039	7.54	27.84
98	55.338f	-501.68	-170634	3.72	28.44
99	60.098f	16.75	-171765	0.12	28.63

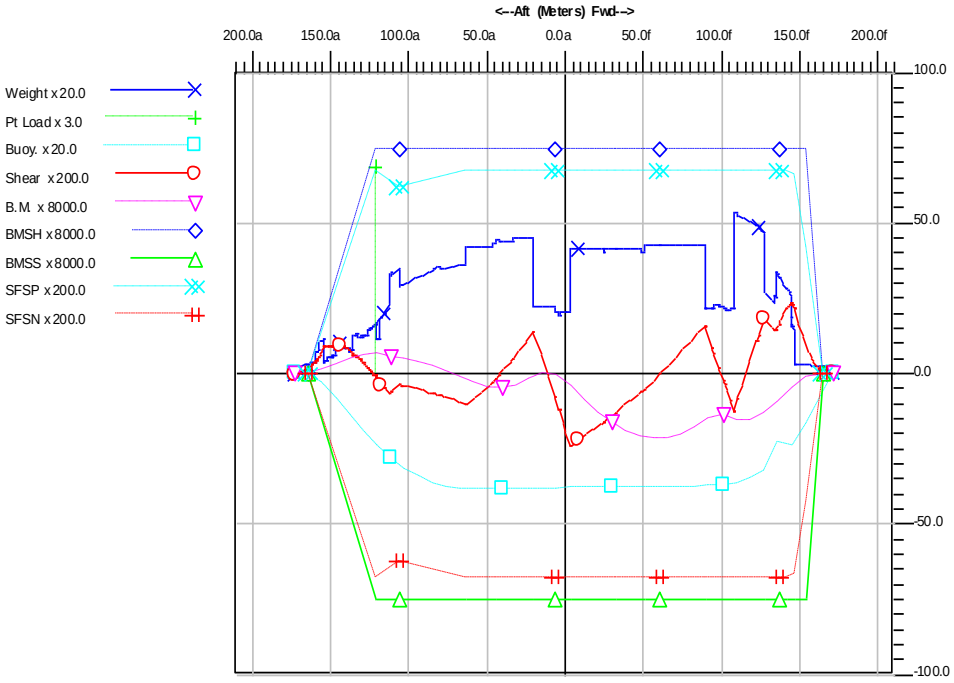
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	546.84	-170401	4.05	28.40
101	69.618f	1078.58	-166509	7.99	27.75
102	74.378f	1611.97	-160083	11.94	26.68
103	79.138f	2147.01	-151114	15.90	25.19
104	83.898f	2683.76	-139594	19.88	23.27
105	88.658f	3222.35	-125514	23.87	20.92
106	93.418f	1784.29	-113578	13.22	18.93
107	98.178f	420.03	-108358	3.11	18.06
108	102.938f	-984.88	-109630	7.30	18.27
109	107.698f	-2413.40	-117750	17.88	19.62
110	112.458f	-788.87	-125286	5.84	20.88
111	117.218f	761.73	-125313	5.64	20.89
112	121.978f	2276.71	-118043	16.86	19.67
113	126.738f	3690.65	-103779	27.34	17.30
114	131.563f	3170.57	-87183	23.49	14.53
115	136.388f	3359.32	-72284	24.88	12.05
116	141.213f	4363.31	-53592	32.32	8.93
117	146.038f	4386.58	-31506	33.16	5.25
118	148.613f	3435.04	-21445	29.48	3.57
119	151.188f	2586.05	-13702	25.66	2.28
120	153.763f	1873.65	-8436	22.04	1.41

Longitudinal Strength At Sea Condition (0.03 deg.)

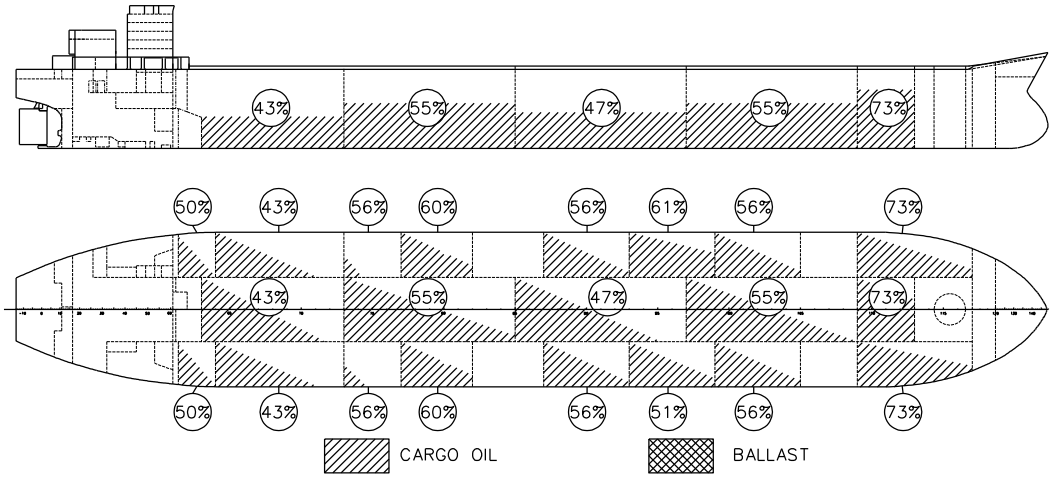
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1816.30	12467	56.84	8.78
61	120.782a	-99.69	54580	0.74	9.10
64	106.502a	-719.68	41896	5.76	6.98
73	63.662a	-2040.14	-13673	15.11	2.28
77	44.622a	-345.21	-36710	2.56	6.12
82	20.822a	2836.96	-8117	21.01	1.35
85	6.542a	-1515.26	1411	11.22	0.24
87	2.978f	-4799.18	-28622	35.55	4.77
93	31.538f	-2537.90	-133781	18.80	22.30
97	50.578f	-1018.46	-167039	7.54	27.84
99	60.098f	16.75	-171765	0.12	28.63
105	88.658f	3222.35	-125514	23.87	20.92
109	107.698f	-2413.40	-117750	17.88	19.62
113	126.738f	3690.65	-103779	27.34	17.30
114*	133.525f	2954.79	-81173	21.89	13.53
115	136.388f	3359.32	-72284	24.88	12.05
116	141.213f	4363.31	-53592	32.32	8.93
116*	144.075f	4697.89	-40445	35.22	6.74
117	146.038f	4386.58	-31506	33.16	5.25
120	153.763f	1873.65	-8436	22.04	1.41

Max. Shear	-4799.19 MT	at	2.978f		35.55%Max
Max. Bending Moment	-171765 MT-m	at	60.098f	(Sagging)	28.63%Max

Longitudinal Strength At Sea Condition



Condition no.7: 60% OFFLOADING – 10% CONSUMABLES



Floating Status

Draft FP	14.100m	Heel	stbd 0.14 deg.	GM(Solid)	12.020m
Draft MS	14.155m	Equil	Yes	F/S Corr	1.453m
Draft AP	14.211m	Wind	0.0 kn	GM(Fluid)	10.567m
Trim	0.11/329.18	Wave	No	KMT	22.309 m
LCG	10.214f	VCG	10.289 m	TPcm	151.38

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	158,084.13	14.821f	0.093p	8.099
Displacement	203,534.14	10.214f	0.030s	10.289

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	426.29	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	20.40	131.422a	7.400p	29.100
RISERS	47.34	138.554f	0.000	-2.570
Total Fixed	**47,196.14**	**4.555a**	**0.546s**	**18.104**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	72.60%	8,300.55	124.569f	16.990p	10.782	7,141.94
N1A C O T.S	72.60%	8,300.55	124.567f	16.995s	10.782	7,144.77
N1 C O T .C	72.60%	7,494.50	117.217f	0.005s	9.992	14,526.39
N2 C O T .C	55.30%	17,124.14	79.132f	0.006s	7.611	43,574.99
N3 C O T .C	47.40%	14,678.53	22.011f	0.007s	6.524	43,574.76
N4 C O T .C	55.30%	17,124.14	35.108a	0.006s	7.611	43,574.99
N5 C O T .C	43.34%	12,184.61	88.215a	0.009s	6.398	41,170.00
N2A COT_SEP.P	56.20%	5,974.66	74.375f	18.315p	7.629	7,521.23
N2A COT_SEP.S	56.20%	5,974.66	74.375f	18.321s	7.629	7,521.23
N3 C O T.P	61.20%	6,506.39	45.817f	18.318p	8.302	7,520.63
N3 C O T.S	51.20%	5,443.26	45.816f	18.320s	6.953	7,520.61
N3A C O T.P	56.20%	5,974.83	17.256f	18.316p	7.627	7,520.63
N3A C O T.S	56.20%	5,974.83	17.256f	18.322s	7.627	7,520.62
N4 COT_SEP.P	60.00%	5,315.51	32.723a	18.318p	8.140	6,266.97
N4 COT_SEP.S	60.00%	5,315.51	32.723a	18.324s	8.140	6,266.98
N4A C O T.P	56.20%	3,972.24	54.143a	18.316p	7.627	4,999.92
N4A C O T.S	56.20%	3,972.24	54.143a	18.322s	7.627	4,999.92
N5 C O T.P	43.31%	6,364.84	83.350a	17.466p	6.749	10,048.15
N5 C O T.S	43.31%	6,364.84	83.348a	17.473s	6.749	10,053.11
SLOP TANK.P	50.00%	1,715.72	112.612a	15.686p	10.924	2,160.87
SLOP TANK.S	50.00%	1,715.70	112.611a	15.693s	10.924	2,165.77
Subtotals:		**155,792.25**	**15.184f**	**0.121p**	**7.914**	**292,794.50**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.138a	2.770p	0.786	174.78
DRAIN TK.C	50.00%	30.21	144.342a	0.006s	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.563a	13.336p	8.254	128.41
SEWAGE.S	50.00%	132.51	123.562a	13.340s	8.254	128.97
Subtotals:		**343.06**	**126.727a**	**0.384p**	**6.673**	**500.08**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	7.23%	21.80	156.655a	8.592p	23.438	1,025.86
POTABLE W.S	6.53%	21.80	156.803a	8.358s	23.421	1,252.65
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**65.96**	**153.689a**	**3.944s**	**22.606**	**2,278.51**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	14.72%	15.01	122.682a	12.819p	19.269	18.67
DO SETTLING 1	10.51%	15.01	127.243a	12.818p	19.110	26.14
DO DAILY.P	98.00%	80.06	131.422a	12.822p	22.434	14.95
Subtotals:		**110.09**	**129.660a**	**12.821p**	**21.549**	**59.76**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.722a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.722a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	4466.8	6.8	13.8	10181
ACOMODATIONS	311.4	23.2	30.2	1877
ACOMOD AFT	171.7	18.0	26.1	893
HELIDECK	33.5	25.4	32.4	256
V-533603	15.3	15.5	22.6	31
V-533604A	15.3	15.5	22.6	31
MODULE M01,M02,M04 (base)	123.5	19.4	26.5	771
MODULE M01	179.3	22.2	29.1	472
MODULE M02	163.6	22.1	29.1	432
MODULE M04	251.1	24.2	31.3	1566
MODULE M03(base)	37.9	17.6	24.7	220
MODULE M03	250.7	28.0	35.1	797
VE SKID SUP.P	46.7	20.3	27.3	348
SKID FORE.P	71.0	17.9	24.9	482
CRANE CV77.S	107.9	21.7	28.7	843
CRANE CV69.P	107.3	21.5	28.6	834
CRANE CV109.P	105.3	21.9	29.0	829
TURRET	442.2	25.1	32.2	3870
LAYDOW AREA	38.1	16.8	23.9	215
CO2 ROOM.S	21.7	14.7	21.7	86
V-541202	26.4	16.9	24.0	57
Fender	55.6	15.1	22.1	81
Total	**7042.3**			**25173**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	25173.0s
80.000s	25173.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.02a	14.152	-0.150	0.000	16.598 (1)	
5.00s	0.01a	14.096	0.776	0.027	14.944 (1)	
10.00s	0.00f	13.917	1.723	0.136	13.217 (1)	
20.00s	0.07f	13.196	3.770	0.612	9.592 (1)	
30.00s	0.18f	12.032	6.019	1.468	5.826 (1)	
40.00s	0.32f	10.595	6.851	2.616	1.874 (1)	
40.55s	0.33f	10.501	6.855	2.682	1.659 (1)	MaxRa
44.70s	0.38f	9.793	6.752	3.176	-0.001 (1)	FldPt
50.00s	0.45f	8.811	6.341	3.784	-2.117 (1)	
60.00s	0.56f	6.757	4.924	4.777	-6.050 (1)	
70.00s	0.65f	4.520	3.077	5.479	-9.832 (1)	
80.00s	0.71f	2.151	1.122	5.846	-13.351 (1)	

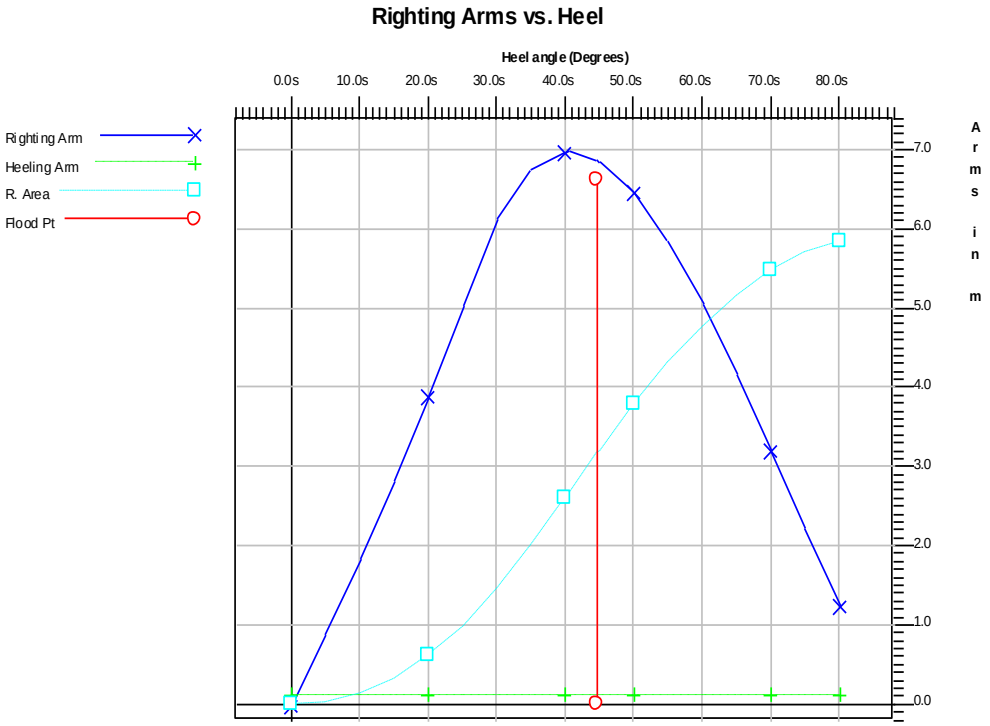
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	16.598

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	33.917	32.517	Yes



Longitudinal Strength At Sea Condition (stbd 0.14 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1251.11	10929	39.15	7.70
20	151.942a	1295.37	13831	33.23	7.98
24	148.902a	1340.11	17870	27.72	8.32
28	145.862a	1294.05	21906	22.42	8.54
32	142.822a	1161.58	25682	17.32	8.61
36	139.782a	870.94	28804	11.39	8.48
40	136.742a	424.21	30819	4.94	8.08
44	133.702a	80.96	31456	0.85	7.44
48	130.662a	-178.53	31392	1.71	6.76
52	127.622a	-566.27	30310	4.97	5.99
56	124.582a	-950.59	27984	7.71	5.11
60	121.542a	-1356.19	24488	10.22	4.15
61	120.782a	-1256.18	23498	9.31	3.92
62	116.022a	-2005.88	15396	15.24	2.57
63	111.262a	-2179.39	4991	16.99	0.83
64	106.502a	-1643.38	-4114	13.16	0.69
65	101.742a	-1656.03	-11947	13.14	1.99
66	96.982a	-1697.14	-19915	13.35	3.32
67	92.222a	-1758.50	-28128	13.71	4.69
68	87.462a	-1836.27	-36674	14.19	6.11
69	82.702a	-1881.30	-45568	14.41	7.59
70	77.942a	-1935.94	-54592	14.71	9.10
71	73.182a	-2042.39	-64054	15.38	10.68
72	68.422a	-2152.59	-74035	16.08	12.34
73	63.662a	-2264.43	-84542	16.77	14.09
74	58.902a	-1797.55	-94206	13.32	15.70
75	54.142a	-1329.32	-101644	9.85	16.94
76	49.382a	-859.73	-106851	6.37	17.81
77	44.622a	-343.12	-109765	2.54	18.29
78	39.862a	315.64	-109773	2.34	18.30
79	35.102a	930.32	-106804	6.89	17.80
80	30.342a	1630.97	-100757	12.08	16.79
81	25.582a	2359.24	-91255	17.48	15.21
82	20.822a	3083.61	-78296	22.84	13.05
83	16.062a	1678.59	-66956	12.43	11.16
84	11.302a	269.93	-62314	2.00	10.39
85	6.542a	-1142.38	-64385	8.46	10.73
86	1.782a	-2762.32	-73674	20.46	12.28
87	2.978f	-4375.69	-90660	32.41	15.11
88	7.738f	-3992.74	-110575	29.58	18.43
89	12.498f	-3605.78	-128657	26.71	21.44
90	17.258f	-3214.81	-144888	23.81	24.15
91	22.018f	-2819.83	-159248	20.89	26.54
92	26.778f	-2416.93	-171718	17.90	28.62
93	31.538f	-2003.49	-182233	14.84	30.37
94	36.298f	-1595.02	-190792	11.81	31.80
95	41.058f	-1192.78	-197420	8.84	32.90
96	45.818f	-796.78	-202149	5.90	33.69
97	50.578f	-449.88	-205061	3.33	34.18
98	55.338f	63.08	-205978	0.47	34.33
99	60.098f	577.38	-204451	4.28	34.08

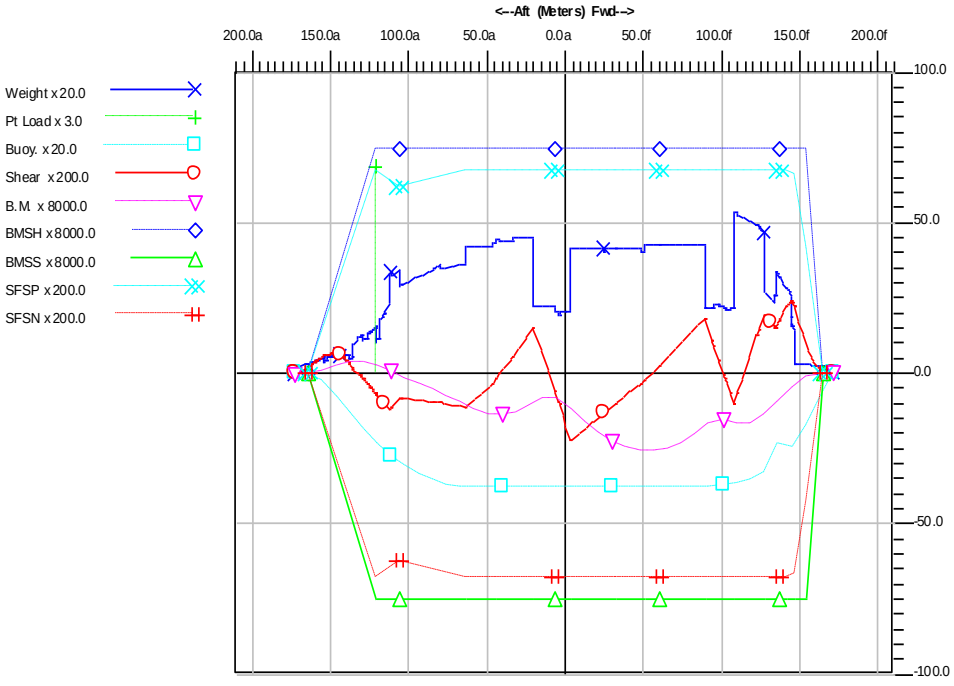
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	1094.59	-200468	8.11	33.41
101	69.618f	1613.15	-194020	11.95	32.34
102	74.378f	2133.07	-185101	15.80	30.85
103	79.138f	2654.35	-173703	19.66	28.95
104	83.898f	3177.02	-159821	23.53	26.64
105	88.658f	3701.25	-143448	27.42	23.91
106	93.418f	2243.59	-129297	16.62	21.55
107	98.178f	858.01	-121961	6.36	20.33
108	102.938f	-569.92	-121222	4.22	20.20
109	107.698f	-2023.11	-127444	14.99	21.24
110	112.458f	-437.23	-133234	3.24	22.21
111	117.218f	1074.86	-131699	7.96	21.95
112	121.978f	2551.67	-123049	18.90	20.51
113	126.738f	3928.05	-107585	29.10	17.93
114	131.563f	3368.40	-89959	24.95	14.99
115	136.388f	3520.76	-74217	26.08	12.37
116	141.213f	4495.75	-54837	33.30	9.14
117	146.038f	4487.18	-32206	33.92	5.37
118	148.613f	3516.30	-21922	30.17	3.65
119	151.188f	2649.38	-14004	26.29	2.33
120	153.763f	1921.26	-8615	22.60	1.44

Longitudinal Strength At Sea Condition (stbd 0.14 deg.)

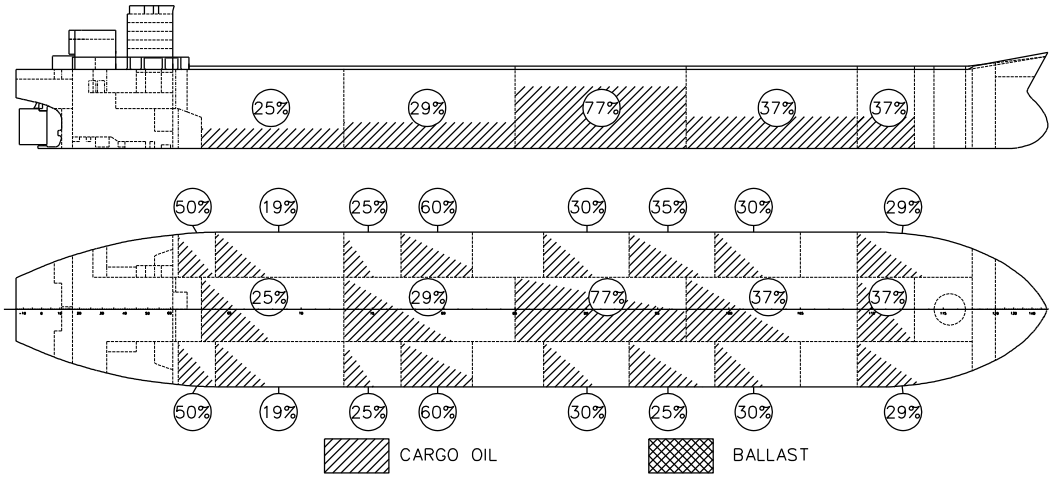
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1251.11	10929	39.15	7.70
61	120.782a	-1256.18	23498	9.31	3.92
64	106.502a	-1643.38	-4114	13.16	0.69
73	63.662a	-2264.43	-84542	16.77	14.09
77	44.622a	-343.12	-109765	2.54	18.29
82	20.822a	3083.61	-78296	22.84	13.05
85	6.542a	-1142.38	-64385	8.46	10.73
87	2.978f	-4375.69	-90660	32.41	15.11
93	31.538f	-2003.49	-182233	14.84	30.37
97	50.578f	-449.88	-205061	3.33	34.18
99	60.098f	577.38	-204451	4.28	34.08
105	88.658f	3701.25	-143448	27.42	23.91
109	107.698f	-2023.11	-127444	14.99	21.24
113	126.738f	3928.05	-107585	29.10	17.93
114*	133.525f	3136.61	-83585	23.23	13.93
115	136.388f	3520.76	-74217	26.08	12.37
116	141.213f	4495.75	-54837	33.30	9.14
116*	144.075f	4812.57	-41348	36.08	6.89
117	146.038f	4487.18	-32206	33.92	5.37
120	153.763f	1921.26	-8615	22.60	1.44

Max. Shear	4852.90 MT	at	143.626f		36.31%Max
Max. Bending Moment	-205978 MT-m	at	55.338f	(Sagging)	34.33%Max

Longitudinal Strength At Sea Condition



Condition no.8: 40% OFFLOADING – 100% CONSUMABLES



Floating Status

Draft FP	9.282m	Heel	0.03 deg.	GM(Solid)	15.056m
Draft MS	10.882m	Equil	Yes	F/S Corr	1.856m
Draft AP	12.482m	Wind	0.0 kn	GM(Fluid)	13.200m
Trim	aft 3.20/329.18	Wave	No	KMT	25.212 m
LCG	4.781f	VCG	10.157 m	TPcm	149.77

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	107,730.55	9.251f	0.203p	6.888
Displacement	153,180.56	4.781f	0.008p	10.157

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	463.46	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	20.40	131.422a	7.400p	29.100
RISERS	48.64	138.554f	0.000	-2.570
Total Fixed	**47,234.61**	**4.439a**	**0.546s**	**18.087**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	28.80%	3,293.04	123.752f	16.585p	4.856	6,305.40
N1A C O T.S	28.80%	3,293.04	123.753f	16.583s	4.856	6,304.48
N1 C O T .C	37.00%	3,819.51	117.189f	0.002p	5.093	14,526.94
N2 C O T .C	37.00%	11,457.38	78.878f	0.002p	5.094	43,576.66
N3 C O T .C	77.18%	23,898.96	21.894f	0.001p	10.623	43,576.43
N4 C O T .C	29.20%	9,042.04	35.431a	0.002p	4.020	43,576.66
N5 C O T .C	24.50%	6,889.04	88.225a	0.003p	3.623	36,845.21
N2A COT_SEP.P	29.70%	3,157.43	74.292f	18.295p	4.056	7,521.48
N2A COT_SEP.S	29.70%	3,157.43	74.292f	18.293s	4.056	7,521.56
N3 C O T.P	34.70%	3,689.08	45.747f	18.305p	4.729	7,520.91
N3 C O T.S	24.70%	2,625.95	45.719f	18.286s	3.380	7,520.89
N3A C O T.P	29.70%	3,157.52	17.175f	18.298p	4.054	7,520.92
N3A C O T.S	29.70%	3,157.52	17.175f	18.296s	4.054	7,520.90
N4 COT_SEP.P	60.00%	5,315.51	32.750a	18.321p	8.140	6,267.21
N4 COT_SEP.S	60.00%	5,315.51	32.750a	18.320s	8.140	6,267.21
N4A C O T.P	25.40%	1,795.28	54.185a	18.290p	3.474	5,000.14
N4A C O T.S	25.40%	1,795.28	54.185a	18.288s	3.474	5,000.10
N5 C O T.P	18.82%	2,766.15	82.619a	16.953p	3.254	8,475.15
N5 C O T.S	18.82%	2,766.15	82.621a	16.950s	3.254	8,472.81
SLOP TANK.P	50.00%	1,715.72	112.626a	15.689p	10.925	2,164.46
SLOP TANK.S	50.00%	1,715.70	112.626a	15.688s	10.925	2,163.52
Subtotals:		**103,823.25**	**11.959f**	**0.189p**	**6.328**	**283,649.06**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.170a	2.778p	0.787	175.26
DRAIN TK.C	50.00%	30.21	144.356a	0.001p	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.570a	13.338p	8.255	128.68
SEWAGE.S	50.00%	132.51	123.570a	13.337s	8.255	128.56
Subtotals:		**343.06**	**126.739a**	**0.388p**	**6.674**	**500.41**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	100.00%	301.39	156.725a	9.274p	25.423	0.00
POTABLE W.S	100.00%	333.92	156.834a	8.760s	25.421	0.00
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**657.67**	**156.476a**	**0.602s**	**25.271**	**0.00**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	98.00%	99.98	122.684a	12.823p	22.434	18.67
DO SETTLING 1	98.00%	139.97	127.245a	12.823p	22.434	26.14
DO DAILY.P	98.00%	80.06	131.423a	12.823p	22.434	14.95
DO STORAGE.P	97.98%	517.30	141.444a	13.614p	23.178	71.56
DO STORAGE.S	98.00%	258.02	137.891a	12.540s	22.974	31.25
Subtotals:		**1,095.33**	**136.348a**	**7.222p**	**22.913**	**162.57**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.723a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.723a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	5593.2	8.5	13.9	12772
ACOMODATIONS	311.4	26.6	32.0	1985
ACOMOD AFT	171.7	22.5	27.8	952
HELIDECK	33.5	28.8	34.2	270
V-533603	15.3	19.0	24.3	34
V-533604A	15.3	19.0	24.3	34
MODULE M01,M02,M04 (base)	123.5	22.9	28.2	822
MODULE M01	179.3	25.5	30.8	501
MODULE M02	163.6	25.5	30.9	458
MODULE M04	251.1	27.7	33.0	1653
MODULE M03(base)	37.9	21.0	26.4	236
MODULE M03	250.7	31.5	36.8	912
VE SKID SUP.P	46.7	23.8	29.1	370
SKID FORE.P	71.0	21.3	26.7	515
CRANE CV77.S	107.9	25.1	30.5	894
CRANE CV69.P	107.3	25.0	30.3	885
CRANE CV109.P	105.3	25.4	30.7	879
TURRET	442.2	28.6	33.9	4078
LAYDOW AREA	38.1	20.3	25.6	230
CO2 ROOM.S	21.7	18.1	23.5	102
V-541202	26.4	20.3	25.7	61
Fender	55.6	18.5	23.9	96
Total	**8168.7**			**28738**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	28738.0s
80.000s	28738.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.56a	10.877	-0.181	0.000	18.682 (1)	
5.00s	0.55a	10.832	0.975	0.035	17.019 (1)	
10.00s	0.53a	10.688	2.155	0.171	15.260 (1)	
20.00s	0.46a	10.104	4.681	0.764	11.515 (1)	
30.00s	0.38a	8.874	6.964	1.795	7.745 (1)	
40.00s	0.35a	6.804	7.877	3.115	4.188 (1)	
40.40s	0.35a	6.712	7.879	3.169	4.048 (1)	MaxRa
50.00s	0.33a	4.436	7.341	4.459	0.521 (1)	
51.41s	0.33a	4.090	7.185	4.638	-0.004 (1)	FldPt
60.00s	0.33a	1.897	5.904	5.626	-3.169 (1)	
70.00s	0.33a	-0.725	3.792	6.481	-6.762 (1)	
80.00s	0.31a	-3.344	1.263	6.925	-10.126 (1)	

Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

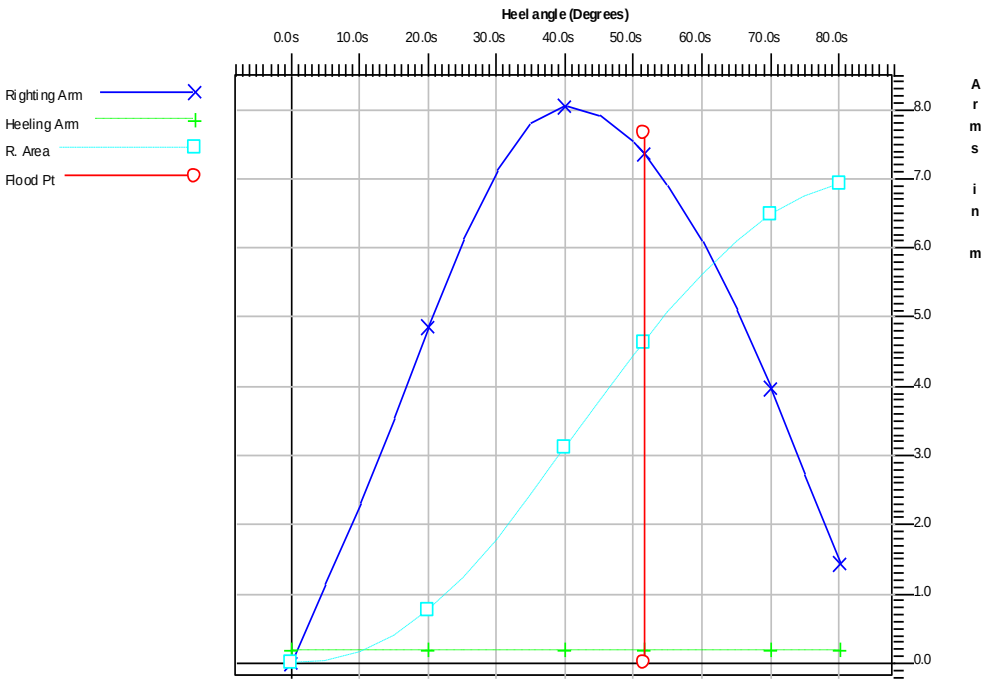
Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	18.682

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	28.554	27.154	Yes

Righting Arms vs. Heel



Longitudinal Strength At Sea Condition (0.03 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1895.44	12933	59.32	9.11
20	151.942a	1980.52	17391	50.81	10.04
24	148.902a	2097.77	23675	43.39	11.02
28	145.862a	2225.36	30268	38.56	11.80
32	142.822a	2384.33	37365	35.54	12.53
36	139.782a	2388.99	44705	31.25	13.16
40	136.742a	2257.55	51867	26.31	13.60
44	133.702a	2256.05	58722	23.70	13.88
48	130.662a	2224.83	65622	21.28	14.12
52	127.622a	2105.19	72286	18.48	14.28
56	124.582a	2026.19	78597	16.43	14.34
60	121.542a	1939.30	84688	14.62	14.36
61	120.782a	2121.34	86248	15.71	14.37
62	116.022a	1801.33	95334	13.68	15.89
63	111.262a	1884.80	103917	14.69	17.32
64	106.502a	2429.31	114258	19.45	19.04
65	101.742a	1810.03	124472	14.36	20.75
66	96.982a	1126.97	131577	8.86	21.93
67	92.222a	394.14	135309	3.07	22.55
68	87.462a	-379.58	135452	2.93	22.58
69	82.702a	-1139.80	131885	8.73	21.98
70	77.942a	-1922.96	124751	14.61	20.79
71	73.182a	-2765.60	113690	20.83	18.95
72	68.422a	-3614.45	98590	27.00	16.43
73	63.662a	-4464.38	79465	33.07	13.24
74	58.902a	-5044.79	56926	37.37	9.49
75	54.142a	-5622.59	31630	41.65	5.27
76	49.382a	-6197.79	3590	45.91	0.60
77	44.622a	-6724.69	-27127	49.81	4.52
78	39.862a	-5993.42	-57250	44.40	9.54
79	35.102a	-5305.00	-84048	39.30	14.01
80	30.342a	-4529.39	-107414	33.55	17.90
81	25.582a	-3724.92	-126965	27.59	21.16
82	20.822a	-2923.13	-142693	21.65	23.78
83	16.062a	-4231.77	-159629	31.35	26.60
84	11.302a	-5536.97	-182787	41.01	30.46
85	6.542a	-6838.70	-212149	50.66	35.36
86	1.782a	-6848.93	-244635	50.73	40.77
87	2.978f	-6845.49	-277139	50.71	46.19
88	7.738f	-5763.08	-307056	42.69	51.18
89	12.498f	-4675.43	-331808	34.63	55.30
90	17.258f	-3582.53	-351370	26.54	58.56
91	22.018f	-2484.39	-365718	18.40	60.95
92	26.778f	-1377.11	-374823	10.20	62.47
93	31.538f	-258.05	-378624	1.91	63.10
94	36.298f	892.48	-377018	6.61	62.84
95	41.058f	2038.02	-369948	15.10	61.66
96	45.818f	3178.56	-357437	23.54	59.57
97	50.578f	4271.20	-339563	31.64	56.59
98	55.338f	4340.84	-318974	32.15	53.16
99	60.098f	4413.07	-298047	32.69	49.67

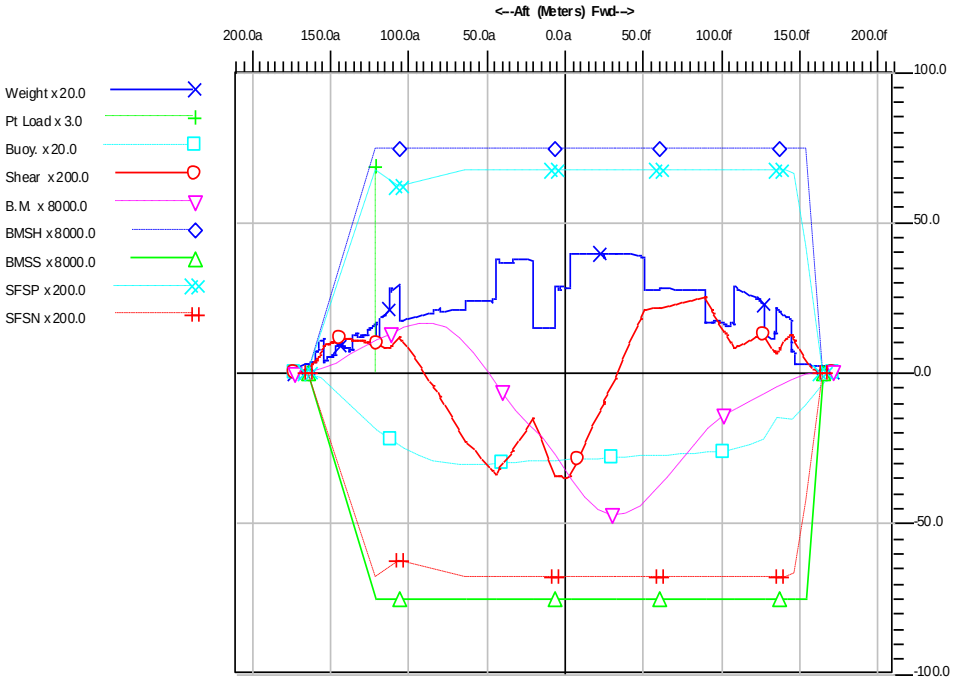
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	4524.71	-276683	33.52	46.11
101	69.618f	4638.93	-254781	34.36	42.46
102	74.378f	4755.74	-232329	35.23	38.72
103	79.138f	4875.13	-209315	36.11	34.89
104	83.898f	4997.16	-185727	37.02	30.95
105	88.658f	5121.97	-161551	37.94	26.93
106	93.418f	4225.56	-139216	31.30	23.20
107	98.178f	3408.54	-121005	25.25	20.17
108	102.938f	2556.21	-106669	18.93	17.78
109	107.698f	1683.46	-96541	12.47	16.09
110	112.458f	1978.92	-87674	14.66	14.61
111	117.218f	2216.46	-77590	16.42	12.93
112	121.978f	2440.43	-66407	18.08	11.07
113	126.738f	2594.40	-54307	19.22	9.05
114	131.563f	1782.65	-43656	13.20	7.28
115	136.388f	1682.31	-36020	12.46	6.00
116	141.213f	2349.78	-26198	17.41	4.37
117	146.038f	2275.43	-14149	17.20	2.36
118	148.613f	1722.95	-8964	14.79	1.49
119	151.188f	1238.07	-5116	12.29	0.85
120	153.763f	840.30	-2666	9.89	0.44

Longitudinal Strength At Sea Condition (0.03 deg.)

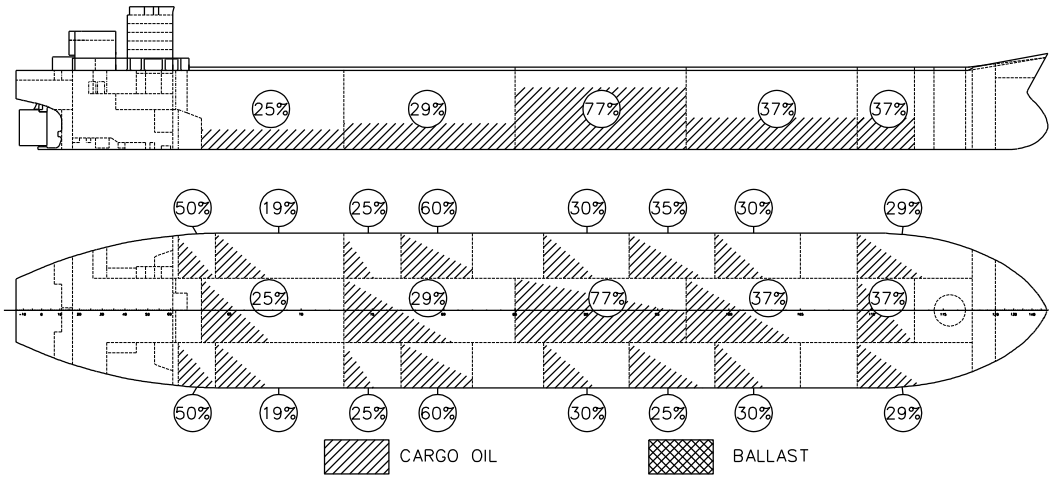
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1895.44	12933	59.32	9.11
61	120.782a	2121.34	86248	15.71	14.37
64	106.502a	2429.31	114258	19.45	19.04
73	63.662a	-4464.38	79465	33.07	13.24
77	44.622a	-6724.69	-27127	49.81	4.52
82	20.822a	-2923.13	-142693	21.65	23.78
85	6.542a	-6838.70	-212149	50.66	35.36
87	2.978f	-6845.49	-277139	50.71	46.19
93	31.538f	-258.05	-378624	1.91	63.10
97	50.578f	4271.20	-339563	31.64	56.59
99	60.098f	4413.07	-298047	32.69	49.67
105	88.658f	5121.97	-161551	37.94	26.93
109	107.698f	1683.46	-96541	12.47	16.09
113	126.738f	2594.40	-54307	19.22	9.05
114*	133.525f	1467.22	-40443	10.87	6.74
115	136.388f	1682.31	-36020	12.46	6.00
116	141.213f	2349.78	-26198	17.41	4.37
116*	144.075f	2577.11	-18956	19.32	3.16
117	146.038f	2275.43	-14149	17.20	2.36
120	153.763f	840.30	-2666	9.89	0.44

Max. Shear	-6848.98 MT	at	0.000		50.73%Max
Max. Bending Moment	-378624 MT-m	at	31.538f	(Sagging)	63.10%Max

Longitudinal Strength At Sea Condition



Condition no.9: 40% OFFLOADING – 10% CONSUMABLES



Floating Status

Draft FP	9.548m	Heel	stbd 0.16 deg.	GM(Solid)	15.298m
Draft MS	10.751m	Equil	Yes	F/S Corr	1.890m
Draft AP	11.955m	Wind	0.0 kn	GM(Fluid)	13.408m
Trim	aft 2.41/329.18	Wave	No	KMT	25.310 m
LCG	6.375f	VCG	10.012 m	TPcm	149.43

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	106,146.49	11.594f	0.136p	6.632
Displacement	151,596.50	6.375f	0.041s	10.012

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	461.40	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	2.40	131.422a	7.400p	29.100
RISERS	48.56	138.554f	0.000	-2.570
Total Fixed	**47,214.48**	**4.397a**	**0.549s**	**18.083**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	28.80%	3,293.04	123.791f	16.575p	4.856	6,302.33
N1A C O T.S	28.80%	3,293.04	123.784f	16.586s	4.856	6,307.62
N1 C O T .C	37.00%	3,819.51	117.196f	0.010s	5.093	14,526.80
N2 C O T .C	37.00%	11,457.38	78.943f	0.010s	5.093	43,576.24
N3 C O T .C	77.22%	23,911.97	21.924f	0.005s	10.629	43,576.02
N4 C O T .C	29.20%	9,042.04	35.349a	0.013s	4.020	43,576.25
N5 C O T .C	24.50%	6,889.00	88.159a	0.015s	3.623	36,844.87
N2A COT_SEP.P	29.70%	3,157.43	74.312f	18.288p	4.056	7,521.44
N2A COT_SEP.S	29.70%	3,157.43	74.312f	18.301s	4.056	7,521.48
N3 C O T.P	34.70%	3,689.08	45.765f	18.298p	4.728	7,520.85
N3 C O T.S	24.70%	2,625.95	45.743f	18.295s	3.380	7,520.85
N3A C O T.P	29.70%	3,157.52	17.196f	18.290p	4.054	7,520.82
N3A C O T.S	29.70%	3,157.52	17.196f	18.303s	4.054	7,520.82
N4 COT_SEP.P	60.00%	5,315.51	32.743a	18.317p	8.140	6,267.14
N4 COT_SEP.S	60.00%	5,315.51	32.743a	18.324s	8.140	6,267.16
N4A C O T.P	25.40%	1,795.28	54.174a	18.281p	3.474	5,000.07
N4A C O T.S	25.40%	1,795.28	54.174a	18.297s	3.474	5,000.06
N5 C O T.P	18.82%	2,766.20	82.559a	16.947p	3.253	8,462.60
N5 C O T.S	18.82%	2,766.16	82.549a	16.964s	3.253	8,475.59
SLOP TANK.P	50.00%	1,715.72	112.623a	15.685p	10.925	2,161.12
SLOP TANK.S	50.00%	1,715.70	112.622a	15.692s	10.925	2,166.51
Subtotals:		**103,836.26**	**11.997f**	**0.180p**	**6.330**	**283,636.63**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.163a	2.767p	0.787	174.09
DRAIN TK.C	50.00%	30.21	144.353a	0.006s	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.569a	13.335p	8.255	128.33
SEWAGE.S	50.00%	132.51	123.568a	13.340s	8.255	128.95
Subtotals:		**343.06**	**126.736a**	**0.383p**	**6.673**	**499.28**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	7.23%	21.80	156.707a	8.609p	23.439	1,025.96
POTABLE W.S	6.53%	21.80	156.868a	8.405s	23.421	1,253.27
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**65.96**	**153.728a**	**3.954s**	**22.606**	**2,279.23**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	14.72%	15.01	122.690a	12.819p	19.269	18.67
DO SETTLING 1	10.51%	15.01	127.264a	12.818p	19.110	26.14
DO DAILY.P	98.00%	80.06	131.423a	12.822p	22.434	14.95
Subtotals:		**110.09**	**129.665a**	**12.821p**	**21.549**	**59.76**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.723a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.723a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	5593.2	8.5	13.9	12772
ACOMODATIONS	311.4	26.6	32.0	1985
ACOMOD AFT	171.7	22.5	27.8	952
HELIDECK	33.5	28.8	34.2	270
V-533603	15.3	19.0	24.3	34
V-533604A	15.3	19.0	24.3	34
MODULE M01,M02,M04 (base)	123.5	22.9	28.2	822
MODULE M01	179.3	25.5	30.8	501
MODULE M02	163.6	25.5	30.9	458
MODULE M04	251.1	27.7	33.0	1653
MODULE M03(base)	37.9	21.0	26.4	236
MODULE M03	250.7	31.5	36.8	912
VE SKID SUP.P	46.7	23.8	29.1	370
SKID FORE.P	71.0	21.3	26.7	515
CRANE CV77.S	107.9	25.1	30.5	894
CRANE CV69.P	107.3	25.0	30.3	885
CRANE CV109.P	105.3	25.4	30.7	879
TURRET	442.2	28.6	33.9	4078
LAYDOW AREA	38.1	20.3	25.6	230
CO2 ROOM.S	21.7	18.1	23.5	102
V-541202	26.4	20.3	25.7	61
Fender	55.6	18.5	23.9	96
Total	**8168.7**			**28738**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	28738.0s
80.000s	28738.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.42a	10.751	-0.225	0.000	19.113 (1)	
5.00s	0.41a	10.706	0.949	0.032	17.448 (1)	
10.00s	0.40a	10.563	2.148	0.166	15.686 (1)	
20.00s	0.33a	9.986	4.715	0.761	11.921 (1)	
30.00s	0.26a	8.758	7.009	1.800	8.141 (1)	
40.00s	0.21a	6.675	7.948	3.130	4.618 (1)	
40.70s	0.21a	6.515	7.952	3.227	4.369 (1)	MaxRa
50.00s	0.19a	4.292	7.432	4.489	0.994 (1)	
52.71s	0.18a	3.613	7.122	4.834	0.000 (1)	FldPt
60.00s	0.17a	1.741	6.004	5.673	-2.659 (1)	
70.00s	0.16a	-0.891	3.894	6.546	-6.222 (1)	
80.00s	0.13a	-3.524	1.355	7.007	-9.549 (1)	

Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

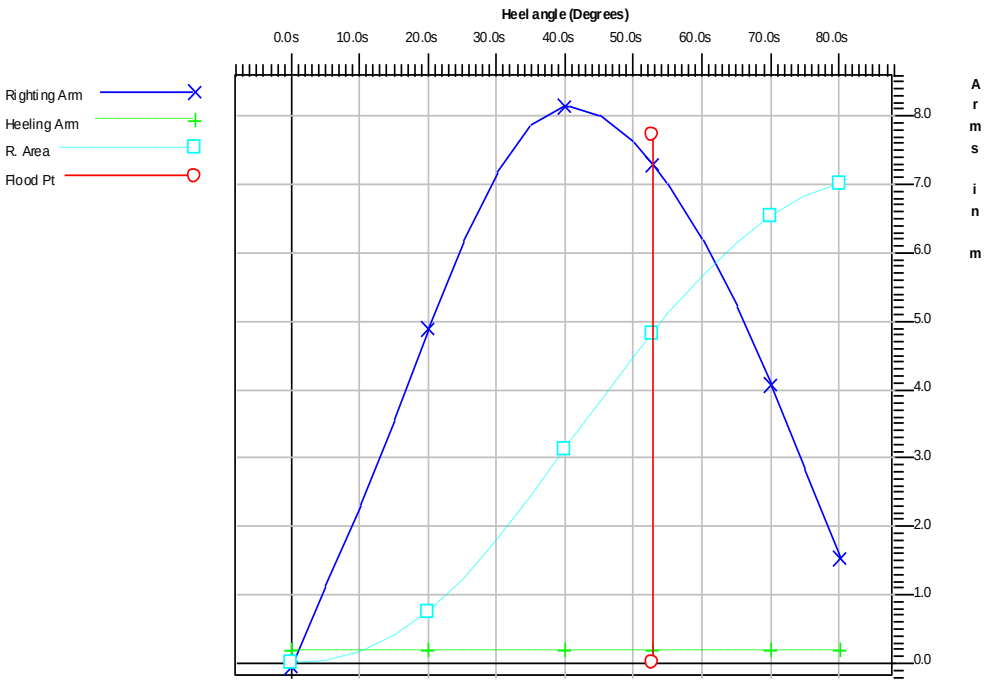
Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	19.113

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	28.717	27.317	Yes

Righting Arms vs. Heel



Longitudinal Strength At Sea Condition (stbd 0.16 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1311.73	11340	41.05	7.98
20	151.942a	1405.31	14465	36.05	8.35
24	148.902a	1538.30	19007	31.82	8.85
28	145.862a	1606.16	23854	27.83	9.30
32	142.822a	1613.24	28827	24.05	9.67
36	139.782a	1487.33	33607	19.45	9.89
40	136.742a	1229.89	37820	14.33	9.92
44	133.702a	1097.34	41322	11.53	9.77
48	130.662a	1065.26	44666	10.19	9.61
52	127.622a	929.15	47783	8.16	9.44
56	124.582a	822.99	50460	6.68	9.21
60	121.542a	716.21	52848	5.40	8.96
61	120.782a	893.64	53473	6.62	8.91
62	116.022a	651.75	56875	4.95	9.48
63	111.262a	816.62	60156	6.37	10.03
64	106.502a	1442.39	65580	11.55	10.93
65	101.742a	900.98	71256	7.15	11.88
66	96.982a	297.71	74200	2.34	12.37
67	92.222a	-353.97	74152	2.76	12.36
68	87.462a	-1045.65	70905	8.08	11.82
69	82.702a	-1723.19	64341	13.20	10.72
70	77.942a	-2423.38	54603	18.41	9.10
71	73.182a	-3183.08	41333	23.98	6.89
72	68.422a	-3949.25	24420	29.50	4.07
73	63.662a	-4716.78	3872	34.94	0.65
74	58.902a	-5236.29	-19747	38.79	3.29
75	54.142a	-5753.52	-45835	42.62	7.64
76	49.382a	-6268.46	-74379	46.43	12.40
77	44.622a	-6735.42	-105314	49.89	17.55
78	39.862a	-5951.27	-135385	44.08	22.56
79	35.102a	-5210.27	-161881	38.59	26.98
80	30.342a	-4382.40	-184696	32.46	30.78
81	25.582a	-3525.99	-203448	26.12	33.91
82	20.822a	-2672.56	-218130	19.80	36.35
83	16.062a	-3934.45	-233786	29.14	38.96
84	11.302a	-5194.71	-255445	38.48	42.57
85	6.542a	-6453.33	-283098	47.80	47.18
86	1.782a	-6434.05	-313703	47.66	52.28
87	2.978f	-6402.91	-344190	47.43	57.36
88	7.738f	-5298.38	-371971	39.25	62.00
89	12.498f	-4188.91	-394484	31.03	65.75
90	17.258f	-3074.51	-411703	22.77	68.62
91	22.018f	-1955.19	-423606	14.48	70.60
92	26.778f	-827.02	-430166	6.13	71.69
93	31.538f	312.59	-431324	2.32	71.89
94	36.298f	1474.34	-426999	10.92	71.17
95	41.058f	2630.78	-417158	19.49	69.53
96	45.818f	3781.90	-401824	28.01	66.97
97	50.578f	4884.81	-381078	36.18	63.51
98	55.338f	4950.40	-357601	36.67	59.60
99	60.098f	5018.27	-333808	37.17	55.63

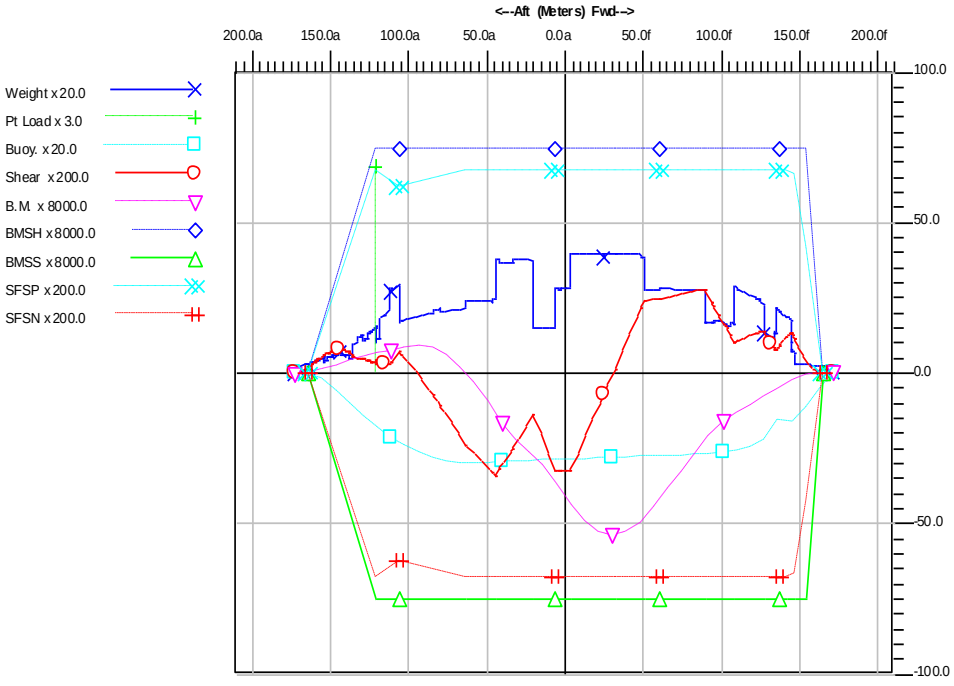
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	5116.19	-309619	37.90	51.60
101	69.618f	5216.38	-284959	38.64	47.49
102	74.378f	5318.84	-259817	39.40	43.30
103	79.138f	5423.58	-234181	40.17	39.03
104	83.898f	5530.65	-208042	40.97	34.67
105	88.658f	5640.17	-181387	41.78	30.23
106	93.418f	4722.88	-156658	34.98	26.11
107	98.178f	3883.16	-136158	28.76	22.69
108	102.938f	3006.33	-119644	22.27	19.94
109	107.698f	2107.33	-107460	15.61	17.91
110	112.458f	2361.90	-96697	17.50	16.12
111	117.218f	2558.84	-84910	18.95	14.15
112	121.978f	2742.72	-72218	20.32	12.04
113	126.738f	2857.40	-58797	21.17	9.80
114	131.563f	2004.29	-47002	14.85	7.83
115	136.388f	1866.02	-38417	13.82	6.40
116	141.213f	2503.38	-27806	18.54	4.63
117	146.038f	2395.70	-15117	18.11	2.52
118	148.613f	1822.90	-9662	15.64	1.61
119	151.188f	1318.96	-5595	13.09	0.93
120	153.763f	904.10	-2982	10.64	0.50

Longitudinal Strength At Sea Condition (stbd 0.16 deg.)

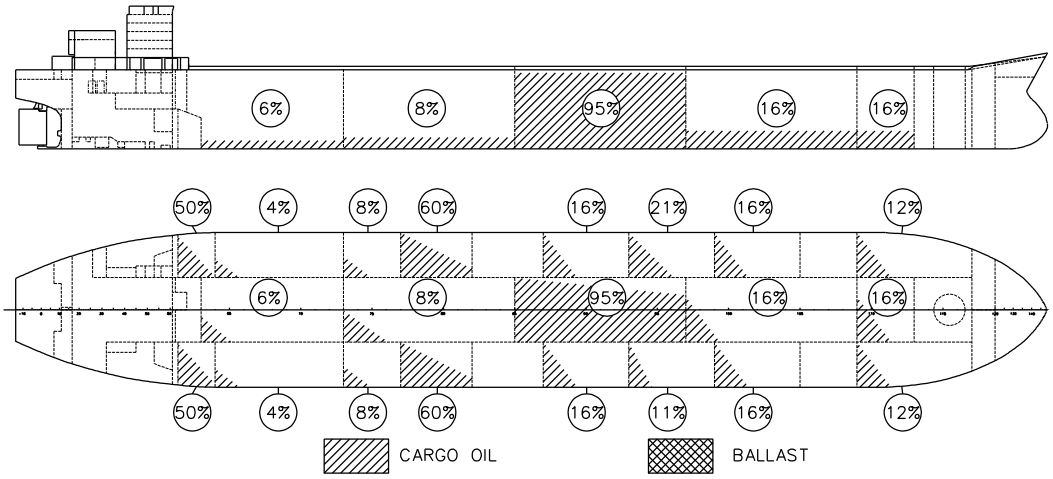
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1311.73	11340	41.05	7.98
61	120.782a	893.64	53473	6.62	8.91
64	106.502a	1442.39	65580	11.55	10.93
73	63.662a	-4716.78	3872	34.94	0.65
77	44.622a	-6735.42	-105314	49.89	17.55
82	20.822a	-2672.56	-218130	19.80	36.35
85	6.542a	-6453.33	-283098	47.80	47.18
87	2.978f	-6402.91	-344190	47.43	57.36
93	31.538f	312.59	-431324	2.32	71.89
97	50.578f	4884.81	-381078	36.18	63.51
99	60.098f	5018.27	-333808	37.17	55.63
105	88.658f	5640.17	-181387	41.78	30.23
109	107.698f	2107.33	-107460	15.61	17.91
113	126.738f	2857.40	-58797	21.17	9.80
114*	133.525f	1672.14	-43380	12.39	7.23
115	136.388f	1866.02	-38417	13.82	6.40
116	141.213f	2503.38	-27806	18.54	4.63
116*	144.075f	2712.18	-20165	20.33	3.36
117	146.038f	2395.70	-15117	18.11	2.52
120	153.763f	904.10	-2982	10.64	0.50

Max. Shear	-6735.44 MT	at	44.622a		49.89%Max
Max. Bending Moment	-431324 MT-m	at	31.538f	(Sagging)	71.89%Max

Longitudinal Strength At Sea Condition



Condition no.10: 27% OFFLOADING – 100% CONSUMABLES



Floating Status

Draft FP	6.956m	Heel	0.03 deg.	GM(Solid)	16.910m
Draft MS	8.615m	Equil	Yes	F/S Corr	2.321m
Draft AP	10.275m	Wind	0.0 kn	GM(Fluid)	14.589m
Trim	aft 3.32/329.18	Wave	No	KMT	29.133 m
LCG	3.349f	VCG	12.225 m	TPcm	147.85

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	73,956.41	8.981f	0.296p	8.733
Displacement	119,406.42	3.349f	0.010p	12.225

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	481.41	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	20.40	131.422a	7.400p	29.100
RISERS	49.26	138.554f	0.000	-2.570
Total Fixed	**47,253.18**	**4.383a**	**0.546s**	**18.079**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	12.40%	1,417.77	122.673f	16.142p	2.403	5,266.96
N1A C O T.S	12.40%	1,417.77	122.677f	16.138s	2.403	5,264.39
N1 C O T .C	16.50%	1,703.30	117.151f	0.005p	2.271	14,526.99
N2 C O T .C	16.50%	5,109.37	78.534f	0.005p	2.274	43,576.82
N3 C O T .C	94.97%	29,409.02	21.913f	0.000	13.072	43,576.59
N4 C O T .C	8.00%	2,477.27	36.347a	0.010p	1.107	43,576.82
N5 C O T .C	6.50%	1,827.57	88.989a	0.012p	0.966	36,845.35
N2A COT_SEP.P	16.00%	1,700.97	74.212f	18.254p	2.208	7,521.56
N2A COT_SEP.S	16.00%	1,700.97	74.212f	18.249s	2.208	7,521.52
N3 C O T.P	21.00%	2,232.59	45.697f	18.279p	2.881	7,520.92
N3 C O T.S	11.00%	1,169.45	45.587f	18.213s	1.530	7,520.94
N3A C O T.P	16.00%	1,701.02	17.099f	18.259p	2.206	7,520.91
N3A C O T.S	16.00%	1,701.02	17.099f	18.254s	2.206	7,520.94
N4 COT_SEP.P	60.00%	5,315.51	32.752a	18.321p	8.140	6,267.24
N4 COT_SEP.S	60.00%	5,315.51	32.752a	18.320s	8.140	6,267.23
N4A C O T.P	8.00%	565.44	54.283a	18.175p	1.122	5,000.13
N4A C O T.S	8.00%	565.44	54.283a	18.164s	1.122	5,000.12
N5 C O T.P	4.32%	634.56	81.727a	16.184p	0.876	5,903.51
N5 C O T.S	4.32%	634.57	81.739a	16.173s	0.876	5,896.96
SLOP TANK.P	50.00%	1,715.72	112.627a	15.689p	10.925	2,164.56
SLOP TANK.S	50.00%	1,715.70	112.627a	15.688s	10.925	2,163.45
Subtotals:		**70,030.55**	**12.946f**	**0.281p**	**8.009**	**276,423.91**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.171a	2.778p	0.787	175.27
DRAIN TK.C	50.00%	30.21	144.357a	0.001p	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.570a	13.338p	8.255	128.68
SEWAGE.S	50.00%	132.51	123.571a	13.337s	8.255	128.55
Subtotals:		**343.06**	**126.740a**	**0.388p**	**6.674**	**500.41**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	100.00%	301.39	156.725a	9.274p	25.423	0.00
POTABLE W.S	100.00%	333.92	156.834a	8.760s	25.421	0.00
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**657.67**	**156.476a**	**0.602s**	**25.271**	**0.00**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	98.00%	99.98	122.684a	12.823p	22.434	18.67
DO SETTLING 1	98.00%	139.97	127.245a	12.823p	22.434	26.14
DO DAILY.P	98.00%	80.06	131.423a	12.823p	22.434	14.95
DO STORAGE.P	97.98%	517.30	141.445a	13.614p	23.178	70.81
DO STORAGE.S	98.00%	258.02	137.892a	12.540s	22.974	31.25
Subtotals:		**1,095.33**	**136.348a**	**7.222p**	**22.913**	**161.81**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.723a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.723a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	6336.3	9. 7	13.9	14484
ACOMODATIONS	311.4	28.9	33.1	2056
ACOMOD AFT	171.7	24.7	29.0	991
HELIDECK	33.5	31.1	35.3	304
V-533603	15.3	21.3	25.5	35
V-533604A	15.3	21.3	25.5	35
MODULE M01,M02,M04 (base)	123.5	25.2	29.4	855
MODULE M01	179.3	27.7	31.9	519
MODULE M02	163.6	27.8	32.0	475
MODULE M04	251.1	29.9	34.2	1710
MODULE M03(base)	37.9	23.3	27.5	246
MODULE M03	250.7	33.7	37.9	941
VE SKID SUP.P	46.7	26.0	30.2	384
SKID FORE.P	71.0	23.6	27.8	537
CRANE CV77.S	107.9	27.4	31.6	928
CRANE CV69.P	107.3	27.3	31.5	918
CRANE CV109.P	105.3	27.6	31.8	912
TURRET	442.2	30.8	35.1	4599
LAYDOW AREA	38.1	22.6	26.8	240
CO2 ROOM.S	21.7	20.4	24.6	107
V-541202	26.4	22.6	26.8	64
Fender	55.6	20.8	25.0	101
Total	**8911.8**			**31443**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	31443.0s
80.000s	31443.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.58a	8.610	-0.254	0.000	20.902 (1)	
5.00s	0.57a	8.574	1.023	0.034	19.227 (1)	
10.00s	0.56a	8.452	2.333	0.180	17.440 (1)	
20.00s	0.51a	7.917	5.096	0.828	13.588 (1)	
30.00s	0.50a	6.503	6.737	1.881	9.852 (1)	
40.00s	0.49a	4.172	7.401	3.125	6.494 (1)	
42.00s	0.50a	3.632	7.427	3.384	5.831 (1)	MaxRa
50.00s	0.53a	1.413	7.055	4.404	3.112 (1)	
59.06s	0.56a	-1.181	5.935	5.439	-0.002 (1)	FldPt
60.00s	0.56a	-1.451	5.788	5.535	-0.325 (1)	
70.00s	0.56a	-4.315	3.874	6.387	-3.681 (1)	
80.00s	0.53a	-7.100	1.367	6.854	-6.838 (1)	

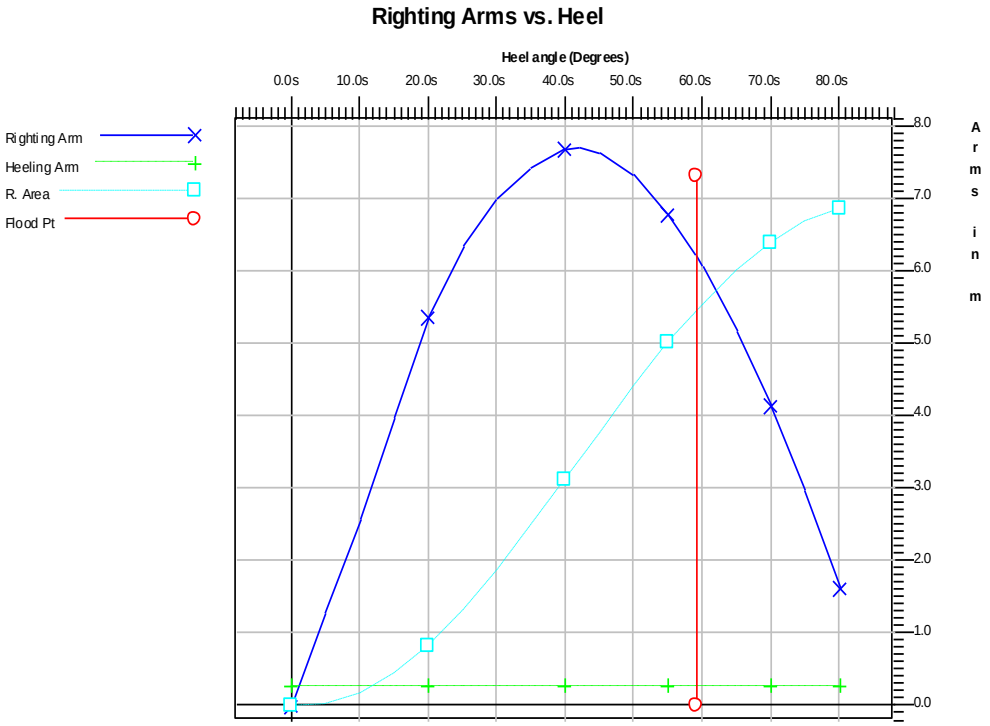
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	20.902

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	21.043	19.643	Yes



Longitudinal Strength At Sea Condition (0.03 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1922.47	13132	60.16	9.25
20	151.942a	2040.83	17705	52.35	10.22
24	148.902a	2222.27	24286	45.96	11.30
28	145.862a	2437.08	31408	42.23	12.24
32	142.822a	2706.20	39333	40.34	13.19
36	139.782a	2843.02	47870	37.19	14.09
40	136.742a	2864.87	56663	33.38	14.86
44	133.702a	3036.66	65646	31.90	15.52
48	130.662a	3197.99	75230	30.59	16.19
52	127.622a	3289.13	85191	28.87	16.83
56	124.582a	3439.00	95468	27.89	17.42
60	121.542a	3597.30	106246	27.12	18.02
61	120.782a	3843.02	109096	28.47	18.18
62	116.022a	3941.68	127396	29.94	21.23
63	111.262a	4371.28	147211	34.08	24.54
64	106.502a	4897.80	169371	39.21	28.23
65	101.742a	3963.89	190636	31.45	31.77
66	96.982a	2934.94	207218	23.08	34.54
67	92.222a	1826.58	218709	14.24	36.45
68	87.462a	648.22	224756	5.01	37.46
69	82.702a	-543.58	225100	4.17	37.52
70	77.942a	-1781.78	219766	13.54	36.63
71	73.182a	-3101.18	208286	23.36	34.71
72	68.422a	-4445.92	190447	33.21	31.74
73	63.662a	-5803.10	166201	42.99	27.70
74	58.902a	-6976.84	135913	51.68	22.65
75	54.142a	-8147.93	100045	60.36	16.67
76	49.382a	-9316.37	58608	69.01	9.77
77	44.622a	-10436.45	11671	77.31	1.95
78	39.862a	-9682.42	-36029	71.72	6.00
79	35.102a	-8971.19	-80296	66.45	13.38
80	30.342a	-8172.73	-121023	60.54	20.17
81	25.582a	-7345.36	-157826	54.41	26.30
82	20.822a	-6520.62	-190696	48.30	31.78
83	16.062a	-7805.59	-224664	57.82	37.44
84	11.302a	-9086.83	-264740	67.31	44.12
85	6.542a	-10364.34	-310906	76.77	51.82
86	1.782a	-9341.98	-357680	69.20	59.61
87	2.978f	-8305.66	-399557	61.52	66.59
88	7.738f	-6675.01	-435083	49.44	72.51
89	12.498f	-5039.06	-462835	37.33	77.14
90	17.258f	-3397.83	-482787	25.17	80.46
91	22.018f	-1751.30	-494915	12.97	82.49
92	26.778f	-95.59	-499187	0.71	83.20
93	31.538f	1571.94	-495548	11.64	82.59
94	36.298f	3272.36	-483887	24.24	80.65
95	41.058f	4967.83	-464144	36.80	77.36
96	45.818f	6658.35	-436342	49.32	72.72
97	50.578f	8300.99	-400559	61.49	66.76
98	55.338f	7934.52	-361790	58.77	60.30
99	60.098f	7570.68	-324759	56.08	54.13

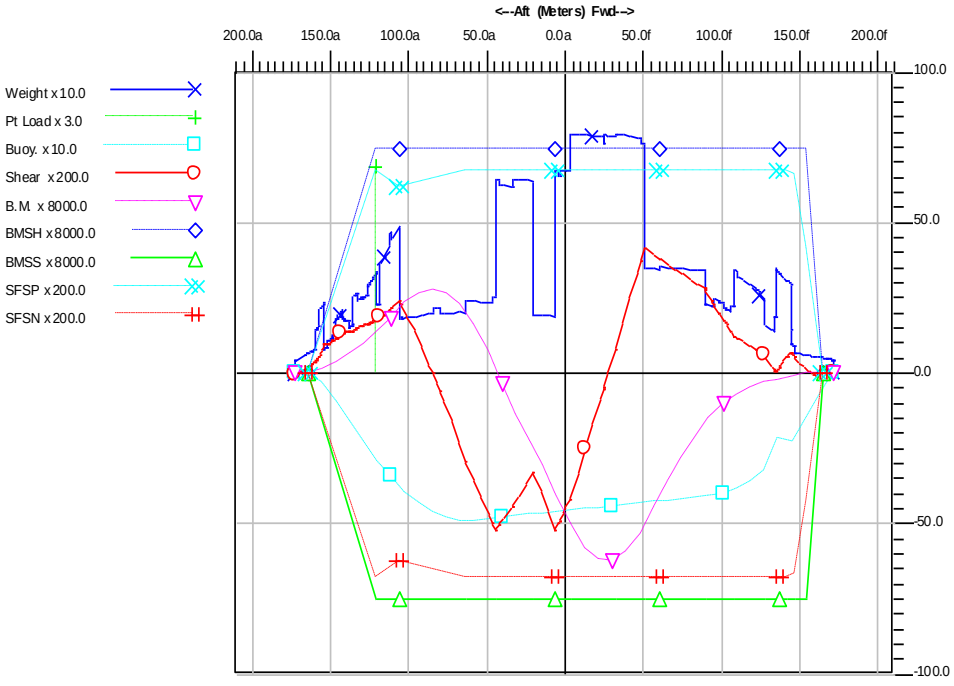
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	7247.69	-289362	53.69	48.23
101	69.618f	6927.32	-255497	51.31	42.58
102	74.378f	6609.59	-223151	48.96	37.19
103	79.138f	6294.50	-192310	46.63	32.05
104	83.898f	5982.08	-162964	44.31	27.16
105	88.658f	5672.48	-135097	42.02	22.52
106	93.418f	4827.86	-109983	35.76	18.33
107	98.178f	4063.00	-88745	30.10	14.79
108	102.938f	3263.00	-71133	24.17	11.86
109	107.698f	2440.80	-57483	18.08	9.58
110	112.458f	2201.63	-46250	16.31	7.71
111	117.218f	1913.46	-36325	14.17	6.05
112	121.978f	1623.42	-27777	12.03	4.63
113	126.738f	1279.24	-20723	9.48	3.45
114	131.563f	519.19	-16265	3.85	2.71
115	136.388f	459.48	-14552	3.40	2.43
116	141.213f	1122.60	-10614	8.32	1.77
117	146.038f	1139.85	-4295	8.62	0.72
118	148.613f	791.32	-1749	6.79	0.29
119	151.188f	493.33	-36	4.90	0.01
120	153.763f	258.74	836	3.04	0.14

Longitudinal Strength At Sea Condition (0.03 deg.)

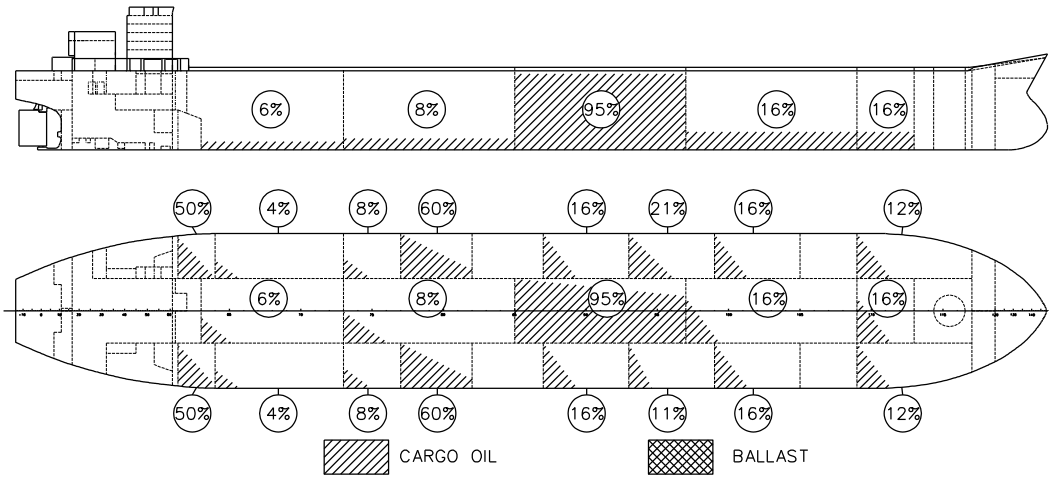
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1922.47	13132	60.16	9.25
61	120.782a	3843.02	109096	28.47	18.18
64	106.502a	4897.80	169371	39.21	28.23
73	63.662a	-5803.10	166201	42.99	27.70
77	44.622a	-10436.45	11671	77.31	1.95
82	20.822a	-6520.62	-190696	48.30	31.78
85	6.542a	-10364.34	-310906	76.77	51.82
87	2.978f	-8305.66	-399557	61.52	66.59
93	31.538f	1571.94	-495548	11.64	82.59
97	50.578f	8300.99	-400559	61.49	66.76
99	60.098f	7570.68	-324759	56.08	54.13
105	88.658f	5672.48	-135097	42.02	22.52
109	107.698f	2440.80	-57483	18.08	9.58
113	126.738f	1279.24	-20723	9.48	3.45
114*	133.525f	231.70	-15489	1.72	2.58
115	136.388f	459.48	-14552	3.40	2.43
116	141.213f	1122.60	-10614	8.32	1.77
116*	144.075f	1382.78	-6828	10.37	1.14
117	146.038f	1139.85	-4295	8.62	0.72
120	153.763f	258.74	836	3.04	0.14

Max. Shear	-10436.47 MT	at	44.622a		77.31%Max
Max. Bending Moment	-499193 MT-m	at	26.770f	(Sagging)	83.20%Max

Longitudinal Strength At Sea Condition



Condition no.11: 27% OFFLOADING – 10% CONSUMABLES



Floating Status

Draft FP	7.235m	Heel	stbd 0.18 deg.	GM(Solid)	17.286m
Draft MS	8.480m	Equil	Yes	F/S Corr	2.370m
Draft AP	9.725m	Wind	0.0 kn	GM(Fluid)	14.916m
Trim	aft 2.49/329.18	Wave	No	KMT	29.353 m
LCG	5.382f	VCG	12.067 m	TPcm	147.63

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	72,377.35	12.412f	0.199p	8.399
Displacement	117,827.35	5.382f	0.054s	12.067

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	479.24	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	2.40	131.422a	7.400p	29.100
RISERS	49.18	138.554f	0.000	-2.570
Total Fixed	**47,232.94**	**4.341a**	**0.549s**	**18.075**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	12.40%	1,417.77	122.761f	16.120p	2.403	5,257.53
N1A C O T.S	12.40%	1,417.77	122.739f	16.143s	2.403	5,271.28
N1 C O T .C	16.50%	1,703.29	117.168f	0.027s	2.271	14,526.88
N2 C O T .C	16.50%	5,109.37	78.685f	0.027s	2.273	43,576.47
N3 C O T .C	95.03%	29,427.07	21.939f	0.005s	13.080	43,576.23
N4 C O T .C	8.00%	2,477.27	36.036a	0.055s	1.105	43,576.47
N5 C O T .C	6.50%	1,827.57	88.731a	0.063s	0.964	36,845.05
N2A COT_SEP.P	16.00%	1,700.97	74.251f	18.238p	2.207	7,521.50
N2A COT_SEP.S	16.00%	1,700.97	74.251f	18.266s	2.207	7,521.49
N3 C O T.P	21.00%	2,232.59	45.727f	18.267p	2.880	7,520.86
N3 C O T.S	11.00%	1,169.45	45.645f	18.237s	1.529	7,520.91
N3A C O T.P	16.00%	1,701.02	17.139f	18.243p	2.205	7,520.84
N3A C O T.S	16.00%	1,701.02	17.139f	18.271s	2.205	7,520.88
N4 COT_SEP.P	60.00%	5,315.51	32.744a	18.317p	8.140	6,267.20
N4 COT_SEP.S	60.00%	5,315.51	32.744a	18.324s	8.140	6,267.19
N4A C O T.P	8.00%	565.44	54.248a	18.142p	1.122	5,000.10
N4A C O T.S	8.00%	565.44	54.248a	18.197s	1.122	5,000.10
N5 C O T.P	4.32%	634.61	81.533a	16.175p	0.874	5,888.39
N5 C O T.S	4.32%	634.58	81.468a	16.233s	0.874	5,922.03
SLOP TANK.P	50.00%	1,715.72	112.623a	15.685p	10.925	2,160.74
SLOP TANK.S	50.00%	1,715.70	112.622a	15.693s	10.925	2,166.91
Subtotals:		**70,048.67**	**13.003f**	**0.266p**	**8.013**	**276,429.06**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.164a	2.765p	0.787	173.89
DRAIN TK.C	50.00%	30.21	144.353a	0.007s	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.569a	13.334p	8.255	128.28
SEWAGE.S	50.00%	132.51	123.568a	13.340s	8.255	128.99
Subtotals:		**343.06**	**126.737a**	**0.383p**	**6.673**	**499.08**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	7.23%	21.80	156.708a	8.591p	23.439	1,025.57
POTABLE W.S	6.53%	21.80	156.873a	8.429s	23.421	1,253.81
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**65.96**	**153.729a**	**3.968s**	**22.606**	**2,279.37**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	14.72%	15.01	122.690a	12.819p	19.269	18.67
DO SETTLING 1	10.51%	15.01	127.264a	12.817p	19.110	26.14
DO DAILY.P	98.00%	80.06	131.423a	12.822p	22.434	14.95
Subtotals:		**110.09**	**129.665a**	**12.821p**	**21.549**	**59.76**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.723a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.723a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	6336.3	9. 7	13.9	14484
ACOMODATIONS	311.4	28.9	33.1	2056
ACOMOD AFT	171.7	24.7	29.0	991
HELIDECK	33.5	31.1	35.3	304
V-533603	15.3	21.3	25.5	35
V-533604A	15.3	21.3	25.5	35
MODULE M01,M02,M04 (base)	123.5	25.2	29.4	855
MODULE M01	179.3	27.7	31.9	519
MODULE M02	163.6	27.8	32.0	475
MODULE M04	251.1	29.9	34.2	1710
MODULE M03(base)	37.9	23.3	27.5	246
MODULE M03	250.7	33.7	37.9	941
VE SKID SUP.P	46.7	26.0	30.2	384
SKID FORE.P	71.0	23.6	27.8	537
CRANE CV77.S	107.9	27.4	31.6	928
CRANE CV69.P	107.3	27.3	31.5	918
CRANE CV109.P	105.3	27.6	31.8	912
TURRET	442.2	30.8	35.1	4599
LAYDOW AREA	38.1	22.6	26.8	240
CO2 ROOM.S	21.7	20.4	24.6	107
V-541202	26.4	22.6	26.8	64
Fender	55.6	20.8	25.0	101
Total	**8911.8**			**31443**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	31443.0s
80.000s	31443.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.43a	8.480	-0.313	0.000	21.351 (1)	
5.00s	0.43a	8.444	0.994	0.030	19.676 (1)	
10.00s	0.42a	8.322	2.333	0.175	17.885 (1)	
20.00s	0.37a	7.791	5.150	0.828	14.025 (1)	
30.00s	0.36a	6.374	6.791	1.891	10.301 (1)	
40.00s	0.35a	4.039	7.462	3.145	6.954 (1)	
42.30s	0.35a	3.420	7.496	3.445	6.194 (1)	MaxRa
50.00s	0.37a	1.263	7.147	4.436	3.618 (1)	
60.00s	0.38a	-1.615	5.897	5.586	0.229 (1)	
60.69s	0.38a	-1.812	5.785	5.656	-0.003 (1)	FldPt
70.00s	0.37a	-4.496	3.986	6.457	-3.073 (1)	
80.00s	0.32a	-7.290	1.476	6.943	-6.197 (1)	

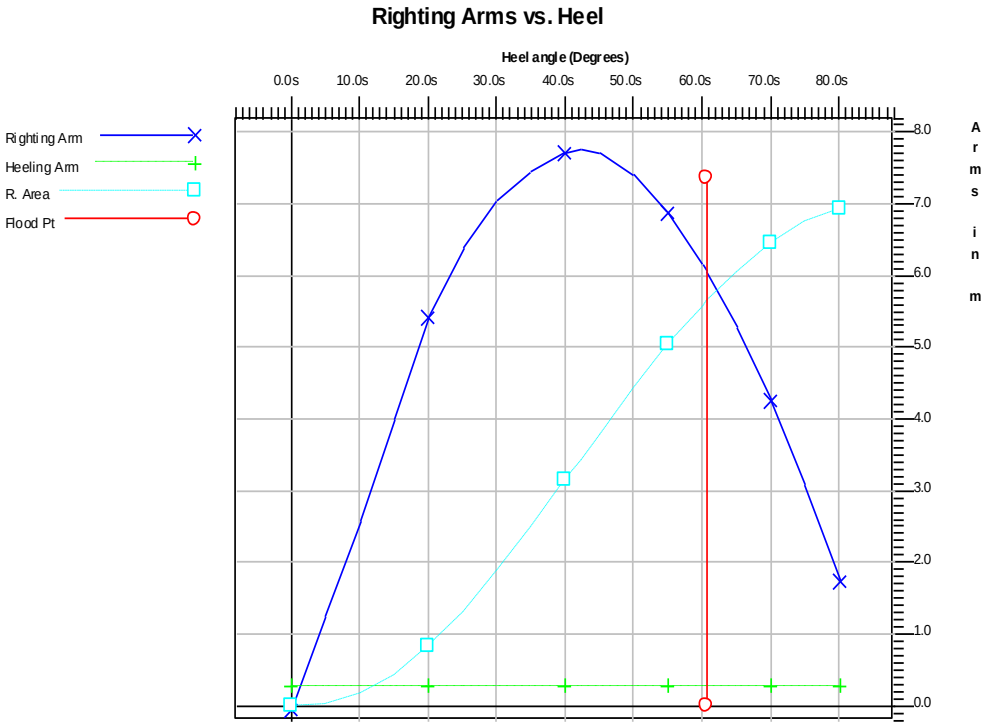
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	21.351

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	21.013	19.613	Yes



Longitudinal Strength At Sea Condition (stbd 0.18 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1335.37	11483	41.79	8.09
20	151.942a	1460.23	14708	37.46	8.49
24	148.902a	1654.57	19521	34.22	9.08
28	145.862a	1806.81	24861	31.31	9.69
32	142.822a	1921.23	30617	28.64	10.27
36	139.782a	1924.76	36542	25.18	10.75
40	136.742a	1817.91	42325	21.18	11.10
44	133.702a	1858.00	47937	19.52	11.33
48	130.662a	2014.29	53838	19.27	11.59
52	127.622a	2086.84	60170	18.32	11.88
56	124.582a	2207.61	66723	17.91	12.18
60	121.542a	2344.51	73704	17.67	12.50
61	120.782a	2585.31	75594	19.15	12.60
62	116.022a	2760.41	88053	20.97	14.68
63	111.262a	3270.42	102403	25.50	17.07
64	106.502a	3877.84	119480	31.05	19.91
65	101.742a	3023.54	136044	23.99	22.67
66	96.982a	2076.25	148310	16.33	24.72
67	92.222a	1051.08	155877	8.19	25.98
68	87.462a	-42.97	158398	0.33	26.40
69	82.702a	-1149.72	155621	8.81	25.94
70	77.942a	-2302.46	147571	17.49	24.60
71	73.182a	-3536.36	133783	26.64	22.30
72	68.422a	-4795.76	114042	35.82	19.01
73	63.662a	-6067.82	88299	44.95	14.72
74	58.902a	-7178.21	56868	53.17	9.48
75	54.142a	-8286.27	20157	61.38	3.36
76	49.382a	-9392.02	-21823	69.57	3.64
77	44.622a	-10449.74	-69005	77.41	11.50
78	39.862a	-9640.72	-116672	71.41	19.45
79	35.102a	-8874.82	-160644	65.74	26.77
80	30.342a	-8022.00	-200817	59.42	33.47
81	25.582a	-7140.61	-236807	52.89	39.47
82	20.822a	-6262.18	-268609	46.39	44.77
83	16.062a	-7498.54	-301264	55.54	50.21
84	11.302a	-8733.08	-339801	64.69	56.63
85	6.542a	-9965.79	-384209	73.82	64.03
86	1.782a	-8912.44	-429046	66.02	71.51
87	2.978f	-7847.03	-468842	58.13	78.14
88	7.738f	-6193.12	-502164	45.87	83.69
89	12.498f	-4534.24	-527601	33.59	87.93
90	17.258f	-2870.40	-545130	21.26	90.86
91	22.018f	-1201.58	-554728	8.90	92.45
92	26.778f	476.09	-556364	3.53	92.73
93	31.538f	2165.26	-549987	16.04	91.66
94	36.298f	3877.55	-535507	28.72	89.25
95	41.058f	5584.55	-512890	41.37	85.48
96	45.818f	7286.28	-482159	53.97	80.36
97	50.578f	8939.82	-443395	66.22	73.90
98	55.338f	8568.88	-401630	63.47	66.94
99	60.098f	8200.25	-361624	60.74	60.27

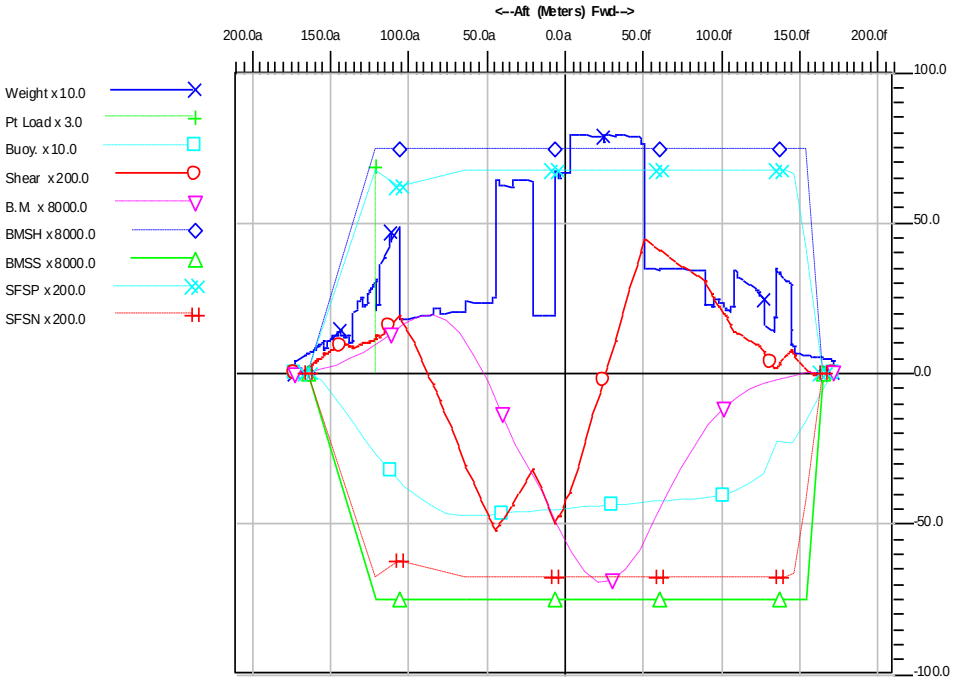
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	7862.69	-323300	58.24	53.88
101	69.618f	7527.44	-286577	55.76	47.76
102	74.378f	7194.50	-251443	53.29	41.91
103	79.138f	6863.87	-217890	50.84	36.31
104	83.898f	6535.59	-185904	48.41	30.98
105	88.658f	6209.81	-155476	46.00	25.91
106	93.418f	5343.16	-127889	39.58	21.31
107	98.178f	4554.37	-104289	33.74	17.38
108	102.938f	3728.57	-84432	27.62	14.07
109	107.698f	2878.81	-68665	21.32	11.44
110	112.458f	2597.21	-55482	19.24	9.25
111	117.218f	2266.97	-43808	16.79	7.30
112	121.978f	1935.50	-33711	14.34	5.62
113	126.738f	1550.85	-25302	11.49	4.22
114	131.563f	748.29	-19670	5.54	3.28
115	136.388f	649.62	-16985	4.81	2.83
116	141.213f	1281.91	-12239	9.50	2.04
117	146.038f	1264.69	-5265	9.56	0.88
118	148.613f	895.43	-2443	7.68	0.41
119	151.188f	577.93	-506	5.74	0.08
120	153.763f	325.73	531	3.83	0.09

Longitudinal Strength At Sea Condition (stbd 0.18 deg.)

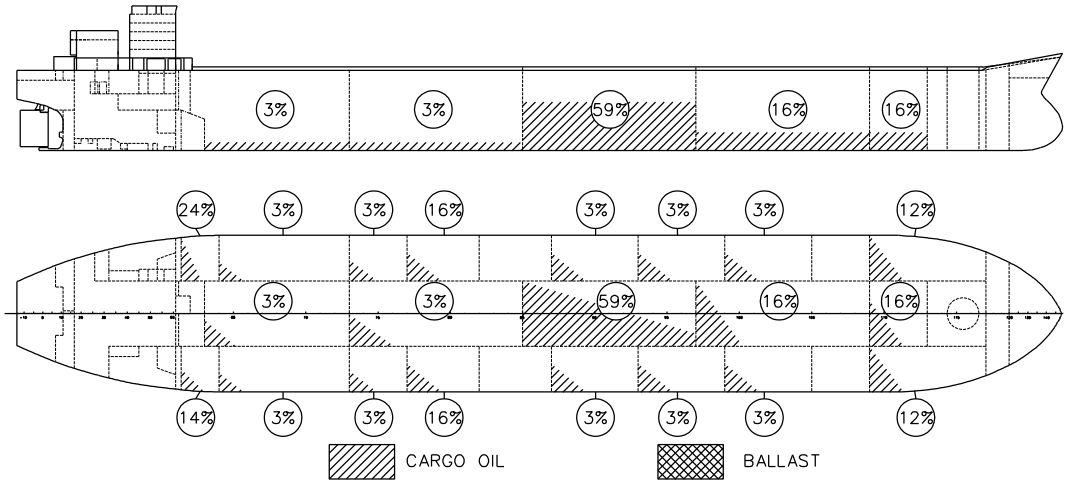
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1335.37	11483	41.79	8.09
61	120.782a	2585.31	75594	19.15	12.60
64	106.502a	3877.84	119480	31.05	19.91
73	63.662a	-6067.82	88299	44.95	14.72
77	44.622a	-10449.74	-69005	77.41	11.50
82	20.822a	-6262.18	-268609	46.39	44.77
85	6.542a	-9965.79	-384209	73.82	64.03
87	2.978f	-7847.03	-468842	58.13	78.14
93	31.538f	2165.26	-549987	16.04	91.66
97	50.578f	8939.82	-443395	66.22	73.90
99	60.098f	8200.25	-361624	60.74	60.27
105	88.658f	6209.81	-155476	46.00	25.91
109	107.698f	2878.81	-68665	21.32	11.44
113	126.738f	1550.85	-25302	11.49	4.22
114*	133.525f	443.60	-18476	3.29	3.08
115	136.388f	649.62	-16985	4.81	2.83
116	141.213f	1281.91	-12239	9.50	2.04
116*	144.075f	1523.00	-8045	11.42	1.34
117	146.038f	1264.69	-5265	9.56	0.88
120	153.763f	325.73	531	3.83	0.09

Max. Shear	-10449.76 MT	at	44.622a		77.41%Max
Max. Bending Moment	-556581 MT-m	at	24.508f	(Sagging)	92.76%Max

Longitudinal Strength At Sea Condition



Condition no.12: MINIMUM LOADED – 100% CONSUMABLES



Floating Status

Draft FP	5.329m	Heel	stbd 0.41 deg.	GM(Solid)	24.044m
Draft MS	6.310m	Equil	Yes	F/S Corr	3.133m
Draft AP	7.291m	Wind	0.0 kn	GM(Fluid)	20.911m
Trim	aft 1.96/329.18	Wave	No	KMT	36.617 m
LCG	5.487f	VCG	12.571 m	TPcm	145.45

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	40,795.71	18.078f	0.140p	6.627
Displacement	86,245.71	5.487f	0.174s	12.571

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	493.95	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	20.40	131.422a	7.400p	29.100
RISERS	49.70	138.554f	0.000	-2.570
Total Fixed	**47,266.16**	**4.343a**	**0.546s**	**18.073**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	12.40%	1,417.77	122.823f	16.099p	2.403	5,247.83
N1A C O T.S	12.40%	1,417.77	122.773f	16.153s	2.403	5,279.60
N1 C O T .C	16.10%	1,662.00	117.177f	0.063s	2.216	14,527.64
N2 C O T .C	16.10%	4,985.51	78.772f	0.063s	2.217	43,578.76
N3 C O T .C	58.72%	18,182.76	21.918f	0.017s	8.082	43,578.53
N4 C O T .C	3.00%	928.98	37.064a	0.339s	0.420	43,578.77
N5 C O T .C	3.00%	843.56	89.275a	0.315s	0.449	36,788.32
N2A COT_SEP.P	3.04%	322.86	73.877f	17.781p	0.442	6,978.59
N2A COT_SEP.S	3.03%	321.92	73.872f	18.095s	0.440	7,081.05
N3 C O T.P	3.03%	322.21	45.334f	17.791p	0.440	7,010.88
N3 C O T.S	3.02%	321.33	45.330f	18.107s	0.439	7,108.00
N3A C O T.P	3.03%	322.21	16.774f	17.791p	0.440	7,010.87
N3A C O T.S	3.02%	321.33	16.770f	18.107s	0.439	7,108.04
N4 COT_SEP.P	16.30%	1,444.05	32.786a	18.227p	2.246	6,267.52
N4 COT_SEP.S	16.30%	1,444.05	32.786a	18.290s	2.246	6,267.50
N4A C O T.P	3.03%	214.21	54.357a	17.790p	0.439	4,661.48
N4A C O T.S	3.02%	213.62	54.359a	18.107s	0.438	4,725.54
N5 C O T.P	3.02%	443.12	81.361a	15.989p	0.630	5,434.83
N5 C O T.S	3.01%	442.98	81.145a	16.167s	0.628	5,539.44
SLOP TANK.P	23.73%	814.41	112.138a	14.711p	6.978	1,076.45
SLOP TANK.S	13.70%	470.23	111.988a	14.090s	5.064	682.65
Subtotals:		**36,856.88**	**26.538f**	**0.095p**	**5.031**	**269,532.28**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.160a	2.751p	0.787	172.32
DRAIN TK.C	50.00%	30.21	144.351a	0.016s	2.118	67.92
OVERFLOW.P	50.00%	132.51	123.568a	13.331p	8.255	127.84
SEWAGE.S	50.00%	132.51	123.566a	13.345s	8.255	129.48
Subtotals:		**343.06**	**126.735a**	**0.377p**	**6.673**	**497.56**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	100.00%	301.39	156.725a	9.274p	25.423	0.00
POTABLE W.S	100.00%	333.92	156.834a	8.760s	25.421	0.00
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**657.67**	**156.476a**	**0.602s**	**25.271**	**0.00**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	98.00%	99.98	122.683a	12.821p	22.434	18.67
DO SETTLING 1	98.00%	139.97	127.244a	12.821p	22.434	26.14
DO DAILY.P	98.00%	80.06	131.423a	12.821p	22.434	14.95
DO STORAGE.P	97.98%	517.26	141.436a	13.612p	23.178	92.09
DO STORAGE.S	98.00%	258.02	137.888a	12.541s	22.974	31.25
Subtotals:		**1,095.29**	**136.343a**	**7.220p**	**22.912**	**183.11**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.723a	12.281s	20.954	4.45
Subtotals:		**26.63**	**144.723a**	**12.281s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	7075.7	10.8	13.9	16194
ACOMODATIONS	311.4	31.2	34.3	2320
ACOMOD AFT	171.7	27.0	30.1	1030
HELIDECK	33.5	33.4	36.5	314
V-533603	15.3	23.5	26.6	37
V-533604A	15.3	23.5	26.6	37
MODULE M01,M02,M04 (base)	123.5	27.4	30.5	888
MODULE M01	179.3	30.0	33.1	538
MODULE M02	163.6	30.1	33.2	492
MODULE M04	251.1	32.2	35.3	1928
MODULE M03(base)	37.9	25.6	28.7	256
MODULE M03	250.7	36.0	39.1	969
VE SKID SUP.P	46.7	28.3	31.4	399
SKID FORE.P	71.0	25.9	29.0	559
CRANE CV77.S	107.9	29.7	32.8	962
CRANE CV69.P	107.3	29.5	32.6	952
CRANE CV109.P	105.3	29.9	33.0	945
TURRET	442.2	33.1	36.2	4750
LAYDOW AREA	38.1	24.8	27.9	251
CO2 ROOM.S	21.7	22.7	25.8	112
V-541202	26.4	24.9	28.0	67
Fender	55.6	23.1	26.2	106
Total	**9651.2**			**34104**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	34104.0s
80.000s	34104.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.34a	6.307	-0.548	0.000	23.728 (1)	
5.00s	0.34a	6.280	1.281	0.032	22.042 (1)	
10.00s	0.33a	6.171	3.185	0.226	20.232 (1)	
20.00s	0.33a	5.502	6.263	1.085	16.407 (1)	
30.00s	0.37a	3.811	7.157	2.278	12.831 (1)	
33.72s	0.39a	2.974	7.206	2.745	11.556 (1)	MaxRa
40.00s	0.41a	1.346	7.089	3.531	9.496 (1)	
50.00s	0.44a	-1.699	6.533	4.727	6.430 (1)	
60.00s	0.44a	-4.915	5.153	5.759	3.401 (1)	
70.00s	0.41a	-8.051	3.127	6.490	0.375 (1)	
71.26s	0.41a	-8.432	2.835	6.555	-0.003 (1)	FldPt
80.00s	0.37a	-10.998	0.589	6.821	-2.586 (1)	

Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

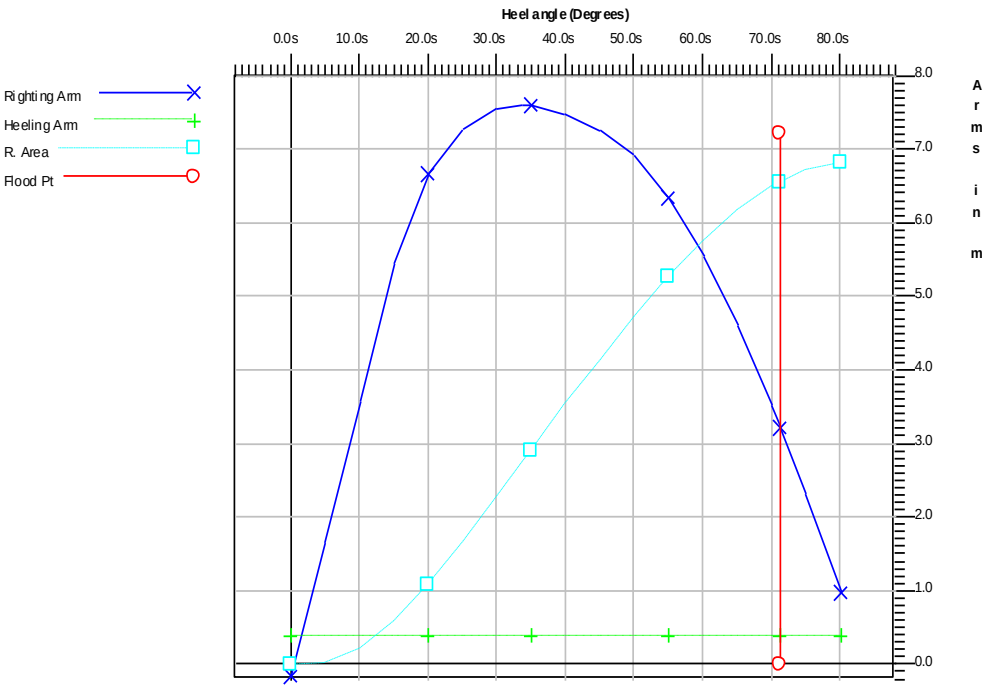
Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	23.728

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	14.328	12.928	Yes

Righting Arms vs. Heel



Longitudinal Strength At Sea Condition (stbd 0.41 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1945.67	12909	60.89	9.09
20	151.942a	2098.56	17541	53.84	10.12
24	148.902a	2349.55	24357	48.60	11.34
28	145.862a	2660.82	31966	46.10	12.46
32	142.822a	3052.79	40712	45.51	13.65
36	139.782a	3338.30	50482	43.67	14.86
40	136.742a	3533.85	60998	41.18	15.99
44	133.702a	3903.52	72269	41.01	17.08
48	130.662a	4285.88	84780	40.99	18.24
52	127.622a	4619.72	98371	40.55	19.43
56	124.582a	5033.31	113049	40.82	20.63
60	121.542a	5476.42	129062	41.28	21.89
61	120.782a	5796.54	133358	42.94	22.23
62	116.022a	5816.80	160880	44.19	26.81
63	111.262a	5994.52	189016	46.73	31.50
64	106.502a	6148.97	217968	49.23	36.33
65	101.742a	5672.24	246206	45.01	41.03
66	96.982a	5119.07	271983	40.26	45.33
67	92.222a	4501.55	294971	35.10	49.16
68	87.462a	3825.57	314880	29.57	52.48
69	82.702a	3144.13	331498	24.09	55.25
70	77.942a	2420.91	344880	18.39	57.48
71	73.182a	1617.74	354571	12.19	59.10
72	68.422a	787.64	360363	5.88	60.06
73	63.662a	-57.66	362180	0.43	60.36
74	58.902a	-904.85	359956	6.70	59.99
75	54.142a	-1749.85	353704	12.96	58.95
76	49.382a	-2592.67	343435	19.20	57.24
77	44.622a	-3387.62	329214	25.09	54.87
78	39.862a	-3693.42	312482	27.36	52.08
79	35.102a	-4042.56	294136	29.94	49.02
80	30.342a	-4305.00	274283	31.89	45.71
81	25.582a	-4539.06	253302	33.62	42.22
82	20.822a	-4776.26	231200	35.38	38.53
83	16.062a	-5582.98	206612	41.36	34.44
84	11.302a	-6389.10	178186	47.33	29.70
85	6.542a	-7194.60	145923	53.29	24.32
86	1.782a	-6531.81	113320	48.38	18.89
87	2.978f	-5858.20	83896	43.39	13.98
88	7.738f	-5059.72	57976	37.48	9.66
89	12.498f	-4256.42	35869	31.53	5.98
90	17.258f	-3448.29	17597	25.54	2.93
91	22.018f	-2635.33	3183	19.52	0.53
92	26.778f	-1813.63	-7347	13.43	1.22
93	31.538f	-980.56	-13931	7.26	2.32
94	36.298f	-131.00	-16507	0.97	2.75
95	41.058f	713.13	-15052	5.28	2.51
96	45.818f	1551.85	-9592	11.50	1.60
97	50.578f	2342.26	-207	17.35	0.03
98	55.338f	2026.12	10257	15.01	1.71
99	60.098f	1712.17	19220	12.68	3.20

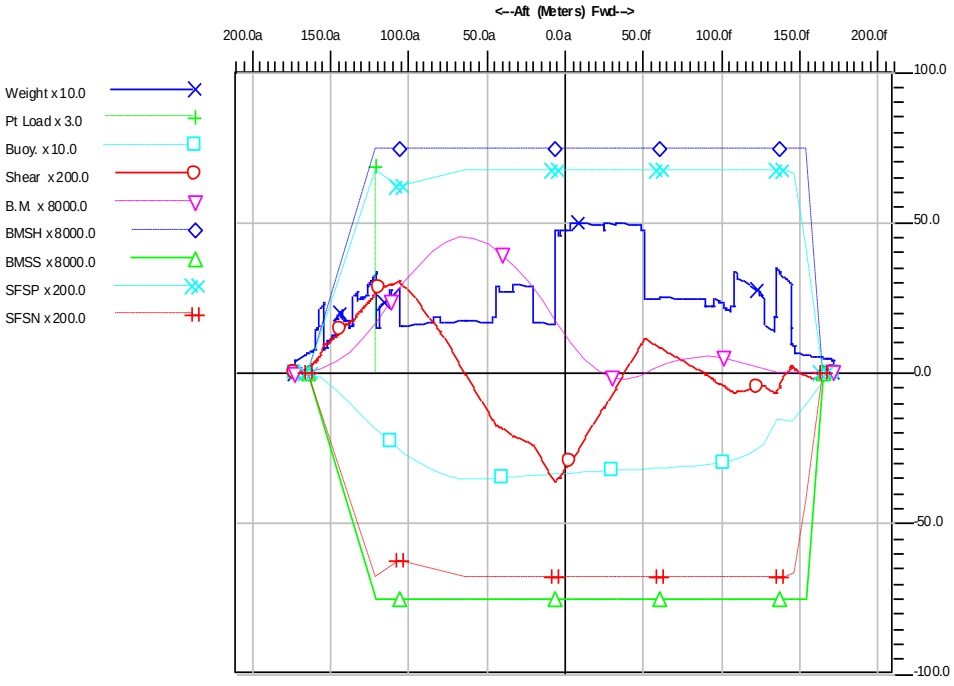
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	1422.67	26747	10.54	4.46
101	69.618f	1135.35	32902	8.41	5.48
102	74.378f	850.19	37694	6.30	6.28
103	79.138f	567.21	41133	4.20	6.86
104	83.898f	286.65	43232	2.12	7.21
105	88.658f	9.37	44002	0.07	7.33
106	93.418f	-354.20	43244	2.62	7.21
107	98.178f	-641.02	40891	4.75	6.82
108	102.938f	-966.47	37181	7.16	6.20
109	107.698f	-1319.78	31755	9.78	5.29
110	112.458f	-1120.45	26072	8.30	4.35
111	117.218f	-978.23	21149	7.25	3.52
112	121.978f	-848.79	16874	6.29	2.81
113	126.738f	-788.11	13068	5.84	2.18
114	131.563f	-1150.71	8455	8.52	1.41
115	136.388f	-863.47	2933	6.40	0.49
116	141.213f	62.86	1073	0.47	0.18
117	146.038f	354.09	2854	2.68	0.48
118	148.613f	150.14	3532	1.29	0.59
119	151.188f	-16.62	3732	0.16	0.62
120	153.763f	-137.14	3480	1.61	0.58

Longitudinal Strength At Sea Condition (stbd 0.41 deg.)

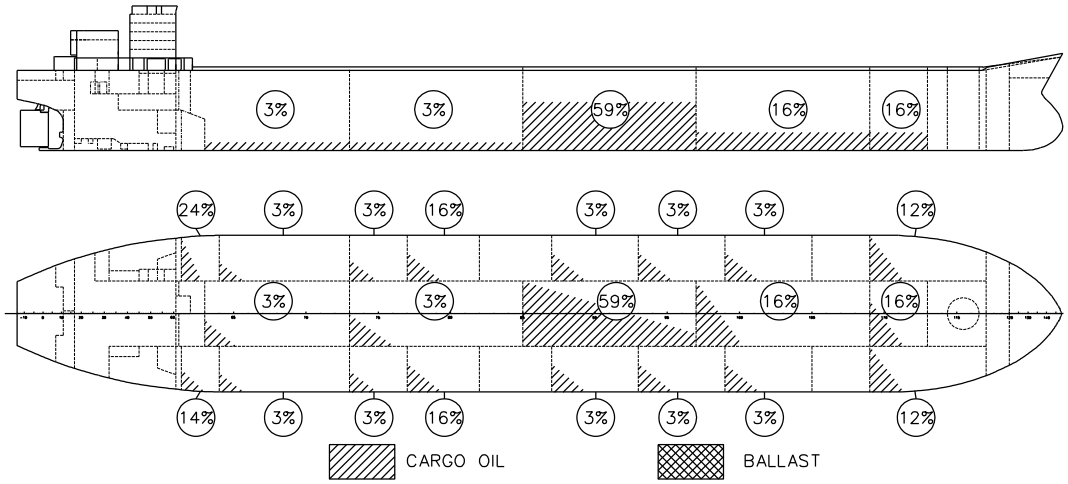
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1945.67	12909	60.89	9.09
61	120.782a	5796.54	133358	42.94	22.23
64	106.502a	6148.97	217968	49.23	36.33
73	63.662a	-57.66	362180	0.43	60.36
77	44.622a	-3387.62	329214	25.09	54.87
82	20.822a	-4776.26	231200	35.38	38.53
85	6.542a	-7194.60	145923	53.29	24.32
87	2.978f	-5858.20	83896	43.39	13.98
93	31.538f	-980.56	-13931	7.26	2.32
97	50.578f	2342.26	-207	17.35	0.03
99	60.098f	1712.17	19220	12.68	3.20
105	88.658f	9.37	44002	0.07	7.33
109	107.698f	-1319.78	31755	9.78	5.29
113	126.738f	-788.11	13068	5.84	2.18
114*	133.525f	-1282.98	6084	9.50	1.01
115	136.388f	-863.47	2933	6.40	0.49
116	141.213f	62.86	1073	0.47	0.18
116*	144.075f	477.61	2007	3.58	0.33
117	146.038f	354.09	2854	2.68	0.48
120	153.763f	-137.14	3480	1.61	0.58

Max. Shear	-7194.61 MT	at	6.542a		53.29%Max
Max. Bending Moment	362180 MT-m	at	63.662a	(Hogging)	60.36%Max

Longitudinal Strength At Sea Condition



Condition no.13: MINIMUM LOADED – 10% CONSUMABLES



Floating Status

Draft FP	5.625m	Heel	stbd 0.61 deg.	GM(Solid)	24.739m
Draft MS	6.172m	Equil	Yes	F/S Corr	3.219m
Draft AP	6.719m	Wind	0.0 kn	GM(Fluid)	21.521m
Trim	aft 1.09/329.18	Wave	No	KMT	37.096 m
LCG	8.353f	VCG	12.355 m	TPcm	145.24

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	39,196.61	24.781f	0.043s	5.917
Displacement	84,646.61	8.353f	0.265s	12.355

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	491.67	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	2.40	131.422a	7.400p	29.100
RISERS	49.62	138.554f	0.000	-2.570
Total Fixed	**47,245.80**	**4.302a**	**0.549s**	**18.070**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	12.40%	1,417.77	122.914f	16.078p	2.403	5,239.59
N1A C O T.S	12.40%	1,417.77	122.840f	16.157s	2.403	5,286.06
N1 C O T .C	16.10%	1,662.00	117.195f	0.093s	2.216	14,528.81
N2 C O T .C	16.10%	4,985.51	78.934f	0.093s	2.217	43,582.29
N3 C O T .C	58.71%	18,180.90	21.962f	0.026s	8.081	43,582.05
N4 C O T .C	3.00%	928.98	36.197a	0.501s	0.417	43,582.29
N5 C O T .C	3.00%	843.58	88.691a	0.466s	0.448	36,807.25
N2A COT_SEP.P	3.04%	323.07	74.091f	17.706p	0.442	6,956.87
N2A COT_SEP.S	3.03%	321.69	74.085f	18.170s	0.440	7,106.07
N3 C O T.P	3.03%	322.44	45.548f	17.716p	0.440	6,989.07
N3 C O T.S	3.02%	321.14	45.545f	18.183s	0.438	7,131.97
N3A C O T.P	3.03%	322.44	16.988f	17.716p	0.440	6,989.12
N3A C O T.S	3.02%	321.14	16.985f	18.183s	0.438	7,132.04
N4 COT_SEP.P	16.30%	1,444.05	32.758a	18.212p	2.246	6,268.04
N4 COT_SEP.S	16.30%	1,444.05	32.758a	18.305s	2.246	6,268.02
N4A C O T.P	3.03%	214.36	54.262a	17.716p	0.440	4,646.79
N4A C O T.S	3.02%	213.50	54.263a	18.183s	0.438	4,741.51
N5 C O T.P	3.02%	443.19	81.090a	15.986p	0.629	5,422.55
N5 C O T.S	3.01%	442.99	80.769a	16.249s	0.627	5,578.31
SLOP TANK.P	23.73%	814.41	112.134a	14.707p	6.978	1,074.20
SLOP TANK.S	13.70%	470.23	111.980a	14.096s	5.064	685.29
Subtotals:		**36,855.20**	**26.647f**	**0.070p**	**5.030**	**269,598.16**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.153a	2.740p	0.786	171.12
DRAIN TK.C	50.00%	30.21	144.347a	0.024s	2.119	67.92
OVERFLOW.P	50.00%	132.51	123.567a	13.328p	8.255	127.49
SEWAGE.S	50.00%	132.51	123.563a	13.348s	8.255	129.91
Subtotals:		**343.06**	**126.732a**	**0.372p**	**6.673**	**496.44**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	7.19%	21.68	156.643a	8.217p	23.440	1,017.63
POTABLE W.S	6.53%	21.79	156.868a	8.845s	23.424	1,263.44
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**65.84**	**153.701a**	**4.252s**	**22.606**	**2,281.07**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	14.72%	15.01	122.686a	12.809p	19.269	18.67
DO SETTLING 1	10.51%	15.01	127.252a	12.804p	19.110	26.14
DO DAILY.P	98.00%	80.06	131.422a	12.820p	22.434	14.95
Subtotals:		**110.09**	**129.662a**	**12.817p**	**21.549**	**59.77**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.722a	12.282s	20.954	4.45
Subtotals:		**26.63**	**144.722a**	**12.282s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	7075.7	10.8	13.9	16194
ACOMODATIONS	311.4	31.2	34.3	2320
ACOMOD AFT	171.7	27.0	30.1	1030
HELIDECK	33.5	33.4	36.5	314
V-533603	15.3	23.5	26.6	37
V-533604A	15.3	23.5	26.6	37
MODULE M01,M02,M04 (base)	123.5	27.4	30.5	888
MODULE M01	179.3	30.0	33.1	538
MODULE M02	163.6	30.1	33.2	492
MODULE M04	251.1	32.2	35.3	1928
MODULE M03(base)	37.9	25.6	28.7	256
MODULE M03	250.7	36.0	39.1	969
VE SKID SUP.P	46.7	28.3	31.4	399
SKID FORE.P	71.0	25.9	29.0	559
CRANE CV77.S	107.9	29.7	32.8	962
CRANE CV69.P	107.3	29.5	32.6	952
CRANE CV109.P	105.3	29.9	33.0	945
TURRET	442.2	33.1	36.2	4750
LAYDOW AREA	38.1	24.8	27.9	251
CO2 ROOM.S	21.7	22.7	25.8	112
V-541202	26.4	24.9	28.0	67
Fender	55.6	23.1	26.2	106
Total	**9651.2**			**34104**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	34104.0s
80.000s	34104.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.19a	6.170	-0.635	0.000	24.200 (1)	
5.00s	0.19a	6.142	1.249	0.027	22.514 (1)	
10.00s	0.18a	6.035	3.209	0.221	20.702 (1)	
20.00s	0.17a	5.358	6.336	1.090	16.904 (1)	
30.00s	0.20a	3.655	7.233	2.296	13.374 (1)	
33.61s	0.21a	2.840	7.282	2.755	12.148 (1)	MaxRa
40.00s	0.23a	1.187	7.160	3.562	10.060 (1)	
50.00s	0.25a	-1.868	6.606	4.770	7.022 (1)	
60.00s	0.22a	-5.104	5.251	5.817	4.069 (1)	
70.00s	0.18a	-8.256	3.240	6.566	1.098 (1)	
73.72s	0.16a	-9.383	2.360	6.748	-0.005 (1)	FldPt
80.00s	0.12a	-11.213	0.711	6.918	-1.832 (1)	

Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

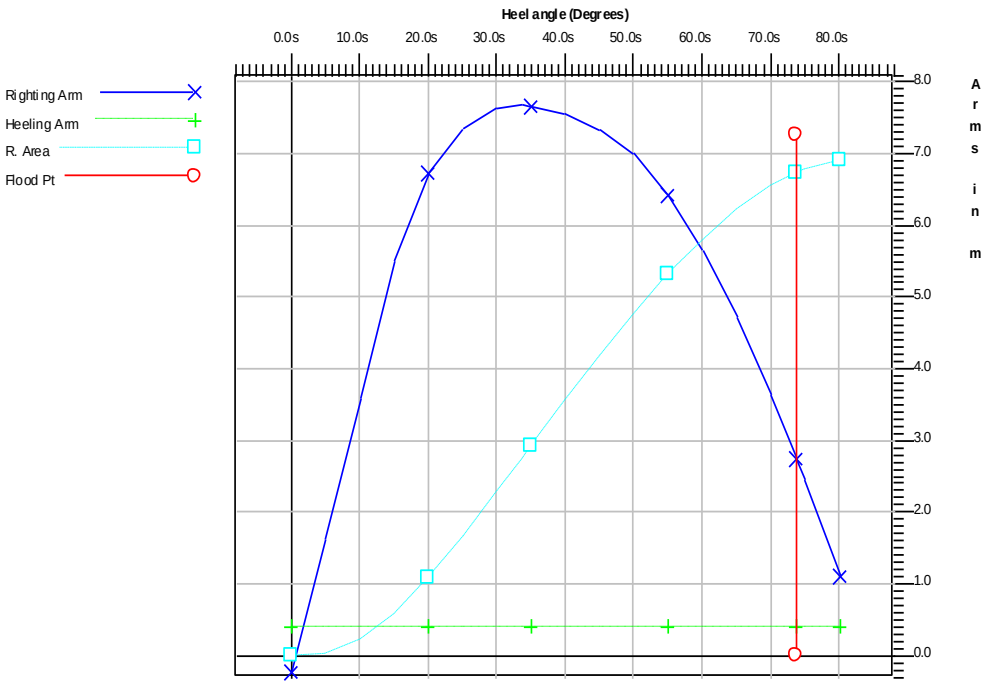
Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	24.200

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	14.016	12.616	Yes

Righting Arms vs. Heel



Longitudinal Strength At Sea Condition (stbd 0.61 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1357.76	11280	42.49	7.94
20	151.942a	1516.54	14562	38.90	8.41
24	148.902a	1779.24	19606	36.80	9.12
28	145.862a	2026.34	25424	35.11	9.91
32	142.822a	2261.60	31987	33.71	10.73
36	139.782a	2411.34	39125	31.54	11.51
40	136.742a	2475.30	46602	28.84	12.22
44	133.702a	2712.31	54521	28.49	12.89
48	130.662a	3084.45	63243	29.50	13.61
52	127.622a	3396.98	73149	29.82	14.45
56	124.582a	3778.61	84038	30.65	15.34
60	121.542a	4197.78	96180	31.64	16.31
61	120.782a	4512.41	99497	33.43	16.58
62	116.022a	4606.31	121049	34.99	20.17
63	111.262a	4861.13	143576	37.90	23.93
64	106.502a	5093.65	167286	40.78	27.88
65	101.742a	4695.60	190654	37.26	31.78
66	96.982a	4224.06	211945	33.22	35.32
67	92.222a	3690.59	230841	28.77	38.47
68	87.462a	3100.66	247062	23.96	41.18
69	82.702a	2506.77	260406	19.21	43.40
70	77.942a	1872.13	270933	14.22	45.16
71	73.182a	1158.20	278193	8.72	46.37
72	68.422a	417.57	281980	3.12	47.00
73	63.662a	-338.36	282216	2.51	47.04
74	58.902a	-1118.71	278783	8.29	46.46
75	54.142a	-1897.27	271640	14.05	45.27
76	49.382a	-2674.03	260796	19.81	43.47
77	44.622a	-3403.31	246313	25.21	41.05
78	39.862a	-3651.14	229612	27.05	38.27
79	35.102a	-3942.66	211574	29.20	35.26
80	30.342a	-4147.83	192301	30.72	32.05
81	25.582a	-4324.97	172173	32.04	28.70
82	20.822a	-4505.60	151194	33.37	25.20
83	16.062a	-5261.05	127986	38.97	21.33
84	11.302a	-6017.88	101178	44.58	16.86
85	6.542a	-6776.10	70765	50.19	11.79
86	1.782a	-6082.27	40197	45.05	6.70
87	2.978f	-5379.62	12951	39.85	2.16
88	7.738f	-4558.13	-10667	33.76	1.78
89	12.498f	-3732.19	-30364	27.65	5.06
90	17.258f	-2901.80	-46119	21.49	7.69
91	22.018f	-2066.96	-57910	15.31	9.65
92	26.778f	-1223.77	-65715	9.06	10.95
93	31.538f	-369.60	-69472	2.74	11.58
94	36.298f	490.99	-69145	3.64	11.52
95	41.058f	1345.79	-64736	9.97	10.79
96	45.818f	2194.79	-56271	16.26	9.38
97	50.578f	2995.09	-43832	22.19	7.31
98	55.338f	2674.50	-30304	19.81	5.05
99	60.098f	2355.71	-18297	17.45	3.05

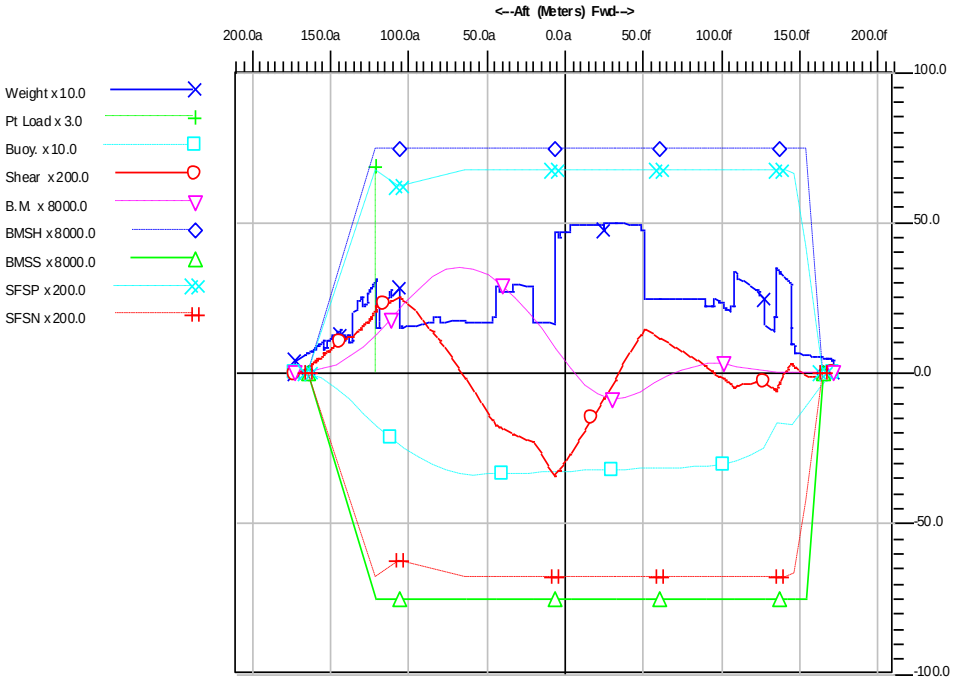
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	2051.30	-7773	15.19	1.30
101	69.618f	1748.69	1306	12.95	0.22
102	74.378f	1447.87	8949	10.72	1.49
103	79.138f	1148.84	15165	8.51	2.53
104	83.898f	851.84	19961	6.31	3.33
105	88.658f	557.72	23351	4.13	3.89
106	93.418f	171.30	25118	1.27	4.19
107	98.178f	-140.37	25177	1.04	4.20
108	102.938f	-492.62	23755	3.65	3.96
109	107.698f	-874.51	20486	6.48	3.41
110	112.458f	-719.27	16786	5.33	2.80
111	117.218f	-620.66	13638	4.60	2.27
112	121.978f	-534.01	10930	3.96	1.82
113	126.738f	-514.94	8492	3.81	1.42
114	131.563f	-921.10	5060	6.82	0.84
115	136.388f	-673.54	513	4.99	0.09
116	141.213f	221.77	-538	1.64	0.09
117	146.038f	478.27	1899	3.62	0.32
118	148.613f	253.31	2852	2.17	0.48
119	151.188f	66.87	3275	0.66	0.55
120	153.763f	-71.40	3186	0.84	0.53

Longitudinal Strength At Sea Condition (stbd 0.61 deg.)

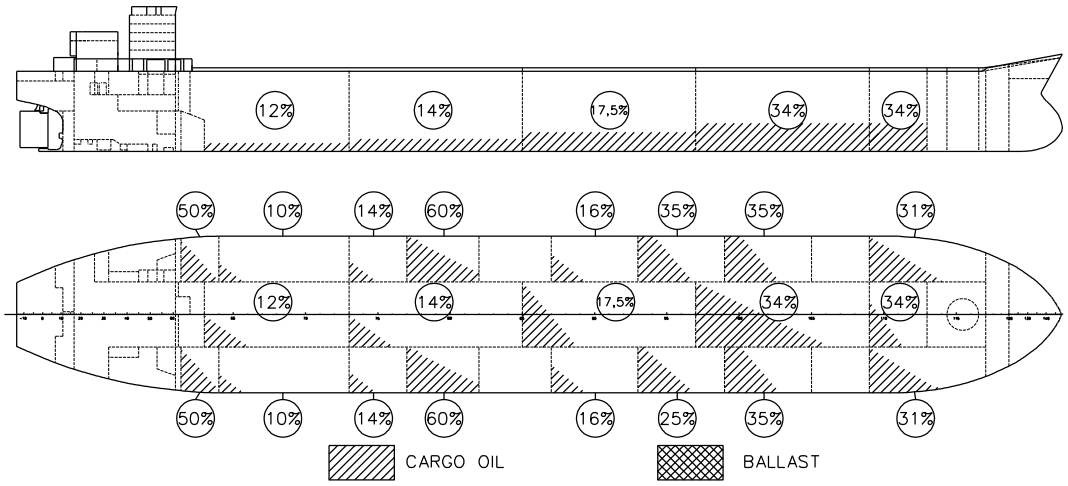
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1357.76	11280	42.49	7.94
61	120.782a	4512.41	99497	33.43	16.58
64	106.502a	5093.65	167286	40.78	27.88
73	63.662a	-338.36	282216	2.51	47.04
77	44.622a	-3403.31	246313	25.21	41.05
82	20.822a	-4505.60	151194	33.37	25.20
85	6.542a	-6776.10	70765	50.19	11.79
87	2.978f	-5379.62	12951	39.85	2.16
93	31.538f	-369.60	-69472	2.74	11.58
97	50.578f	2995.09	-43832	22.19	7.31
99	60.098f	2355.71	-18297	17.45	3.05
105	88.658f	557.72	23351	4.13	3.89
109	107.698f	-874.51	20486	6.48	3.41
113	126.738f	-514.94	8492	3.81	1.42
114*	133.525f	-1070.94	3109	7.93	0.52
115	136.388f	-673.54	513	4.99	0.09
116	141.213f	221.77	-538	1.64	0.09
116*	144.075f	617.32	805	4.63	0.13
117	146.038f	478.27	1899	3.62	0.32
120	153.763f	-71.40	3186	0.84	0.53

Max. Shear	-6776.11 MT	at	6.542a		50.19%Max
Max. Bending Moment	282216 MT-m	at	63.662a	(Hogging)	47.04%Max

Longitudinal Strength At Sea Condition



Condition no.14: 27% LOADING – 100% CONSUMABLES



Floating Status

Draft FP	8.095m	Heel	0.03 deg.	GM(Solid)	18.650m
Draft MS	8.592m	Equil	Yes	F/S Corr	2.347m
Draft AP	9.089m	Wind	0.0 kn	GM(Fluid)	16.303m
Trim	aft 0.99/329.18	Wave	No	KMT	28.919 m
LCG	9.204f	VCG	10.268 m	TPcm	147.51

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	74,691.87	18.342f	0.293p	5.620
Displacement	120,141.87	9.204f	0.010p	10.268

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	472.61	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	20.40	131.422a	7.400p	29.100
RISERS	48.95	138.554f	0.000	-2.570
Total Fixed	**47,244.08**	**4.410a**	**0.546s**	**18.083**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	31.30%	3,578.75	123.929f	16.619p	5.210	6,399.61
N1A C O T.S	31.30%	3,578.75	123.931f	16.617s	5.210	6,398.54
N1 C O T .C	34.10%	3,520.14	117.208f	0.002p	4.693	14,526.32
N2 C O T .C	34.10%	10,559.37	79.050f	0.002p	4.693	43,574.80
N3 C O T .C	17.53%	5,427.47	21.848f	0.004p	2.413	43,574.57
N4 C O T .C	13.80%	4,273.29	35.318a	0.005p	1.900	43,574.80
N5 C O T .C	12.20%	3,430.21	88.124a	0.006p	1.804	36,843.64
N2A COT_SEP.P	34.70%	3,688.98	74.353f	18.303p	4.730	7,521.23
N2A COT_SEP.S	34.70%	3,688.98	74.353f	18.300s	4.730	7,521.18
N3 C O T.P	35.47%	3,770.95	45.797f	18.306p	4.832	7,520.57
N3 C O T.S	25.47%	2,707.81	45.788f	18.288s	3.483	7,520.57
N3A C O T.P	16.30%	1,732.91	17.211f	18.261p	2.245	7,520.55
N3A C O T.S	16.30%	1,732.91	17.211f	18.256s	2.245	7,520.60
N4 COT_SEP.P	60.00%	5,315.51	32.731a	18.321p	8.140	6,266.94
N4 COT_SEP.S	60.00%	5,315.51	32.731a	18.320s	8.140	6,266.96
N4A C O T.P	13.90%	982.46	54.166a	18.246p	1.921	4,999.91
N4A C O T.S	13.90%	982.46	54.166a	18.241s	1.921	4,999.91
N5 C O T.P	10.40%	1,528.61	81.801a	16.634p	1.925	7,194.58
N5 C O T.S	10.40%	1,528.61	81.805a	16.629s	1.925	7,190.79
SLOP TANK.P	50.00%	1,715.72	112.616a	15.690p	10.924	2,163.99
SLOP TANK.S	50.00%	1,715.70	112.616a	15.688s	10.924	2,162.96
Subtotals:		**70,775.10**	**22.800f**	**0.278p**	**4.730**	**281,263.00**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.146a	2.780p	0.786	175.84
DRAIN TK.C	50.00%	30.21	144.346a	0.001p	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.564a	13.338p	8.255	128.73
SEWAGE.S	50.00%	132.51	123.565a	13.337s	8.255	128.61
Subtotals:		**343.06**	**126.731a**	**0.388p**	**6.673**	**501.09**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	100.00%	301.39	156.725a	9.274p	25.423	0.00
POTABLE W.S	100.00%	333.92	156.834a	8.760s	25.421	0.00
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**657.67**	**156.476a**	**0.602s**	**25.271**	**0.00**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	98.00%	99.98	122.683a	12.823p	22.434	18.67
DO SETTLING 1	98.00%	139.97	127.243a	12.823p	22.434	26.14
DO DAILY.P	98.00%	80.06	131.422a	12.823p	22.434	14.95
DO STORAGE.P	97.98%	517.29	141.432a	13.613p	23.178	85.04
DO STORAGE.S	98.00%	258.02	137.885a	12.540s	22.974	31.24
Subtotals:		**1,095.32**	**136.340a**	**7.221p**	**22.913**	**176.04**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.722a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.722a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	6320.3	9.6	13.9	14447
ACOMODATIONS	311.4	28.8	33.1	2054
ACOMOD AFT	171.7	24.7	28.9	990
HELIDECK	33.5	31.0	35.3	304
V-533603	15.3	21.2	25.5	35
V-533604A	15.3	21.2	25.5	35
MODULE M01,M02,M04 (base)	123.5	25.1	29.4	854
MODULE M01	179.3	27.7	31.9	519
MODULE M02	163.6	27.8	32.0	475
MODULE M04	251.1	29.9	34.1	1709
MODULE M03(base)	37.9	23.3	27.5	246
MODULE M03	250.7	33.7	37.9	940
VE SKID SUP.P	46.7	26.0	30.2	384
SKID FORE.P	71.0	23.6	27.8	537
CRANE CV77.S	107.9	27.4	31.6	927
CRANE CV69.P	107.3	27.2	31.5	918
CRANE CV109.P	105.3	27.6	31.8	911
TURRET	442.2	30.8	35.0	4596
LAYDOW AREA	38.1	22.5	26.8	240
CO2 ROOM.S	21.7	20.4	24.6	106
V-541202	26.4	22.6	26.8	64
Fender	55.6	20.8	25.0	101
Total	**8895.8**			**31393**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	31393.0s
80.000s	31393.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.17a	8.591	-0.252	0.000	21.817 (1)	
5.00s	0.17a	8.556	1.173	0.040	20.139 (1)	
10.00s	0.16a	8.434	2.625	0.206	18.346 (1)	
20.00s	0.11a	7.911	5.603	0.924	14.477 (1)	
30.00s	0.08a	6.522	7.406	2.081	10.762 (1)	
40.00s	0.06a	4.206	8.151	3.451	7.420 (1)	
41.82s	0.06a	3.721	8.175	3.710	6.829 (1)	MaxRa
50.00s	0.05a	1.460	7.745	4.856	4.128 (1)	
60.00s	0.03a	-1.393	6.290	6.094	0.781 (1)	
62.37s	0.02a	-2.075	5.819	6.345	-0.002 (1)	FldPt
70.00s	0.01f	-4.265	4.054	7.006	-2.473 (1)	
80.00s	0.07f	-7.052	1.255	7.477	-5.563 (1)	

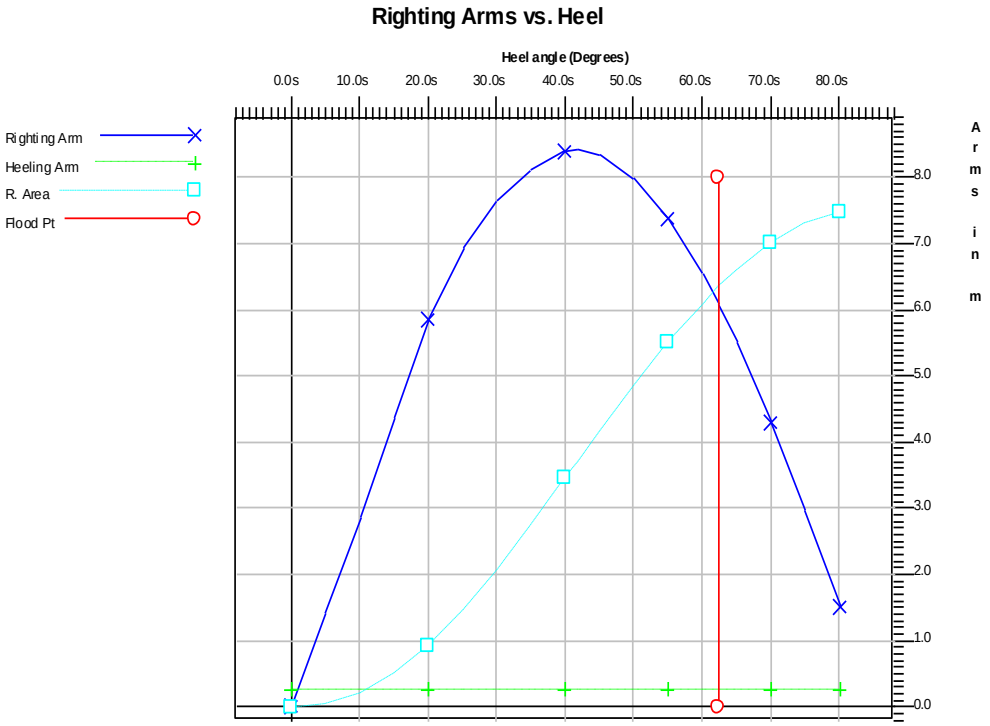
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	21.817

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	23.309	21.909	Yes



Longitudinal Strength At Sea Condition (0.03 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1931.89	12763	60.46	8.99
20	151.942a	2063.85	17324	52.95	10.00
24	148.902a	2272.25	23951	47.00	11.15
28	145.862a	2523.68	31214	43.73	12.17
32	142.822a	2838.80	39407	42.32	13.22
36	139.782a	3030.45	48365	39.64	14.23
40	136.742a	3115.40	57758	36.30	15.14
44	133.702a	3357.72	67544	35.27	15.97
48	130.662a	3596.29	78157	34.40	16.82
52	127.622a	3770.27	89390	33.09	17.65
56	124.582a	4008.11	101198	32.51	18.47
60	121.542a	4259.59	113783	32.11	19.30
61	120.782a	4529.43	117130	33.55	19.52
62	116.022a	4778.42	138952	36.30	23.16
63	111.262a	5397.50	163042	42.08	27.17
64	106.502a	6234.60	190723	49.92	31.79
65	101.742a	5724.04	219247	45.42	36.54
66	96.982a	5145.90	245171	40.47	40.86
67	92.222a	4512.18	268208	35.18	44.70
68	87.462a	3830.20	288112	29.60	48.02
69	82.702a	3154.38	304724	24.17	50.79
70	77.942a	2448.05	318153	18.60	53.03
71	73.182a	1674.16	328001	12.61	54.67
72	68.422a	886.32	334121	6.62	55.69
73	63.662a	92.94	336491	0.69	56.08
74	58.902a	-632.65	335236	4.69	55.87
75	54.142a	-1356.52	330531	10.05	55.09
76	49.382a	-2078.68	322385	15.40	53.73
77	44.622a	-2753.43	310860	20.40	51.81
78	39.862a	-1783.26	300147	13.21	50.02
79	35.102a	-856.82	293893	6.35	48.98
80	30.342a	155.93	292201	1.16	48.70
81	25.582a	1196.66	295452	8.86	49.24
82	20.822a	2233.84	303649	16.55	50.61
83	16.062a	1147.04	311726	8.50	51.95
84	11.302a	58.62	314627	0.43	52.44
85	6.542a	-1031.41	312342	7.64	52.06
86	1.782a	-2012.70	305127	14.91	50.85
87	2.978f	-2985.42	293259	22.11	48.88
88	7.738f	-3369.53	278163	24.96	46.36
89	12.498f	-3749.27	261248	27.77	43.54
90	17.258f	-4124.65	242537	30.55	40.42
91	22.018f	-4495.66	222049	33.30	37.01
92	26.778f	-4858.41	199804	35.99	33.30
93	31.538f	-5210.26	175874	38.59	29.31
94	36.298f	-5054.50	151477	37.44	25.25
95	41.058f	-4904.62	127807	36.33	21.30
96	45.818f	-4760.62	104836	35.26	17.47
97	50.578f	-4665.37	82483	34.56	13.75
98	55.338f	-4165.48	61495	30.86	10.25
99	60.098f	-3663.89	42891	27.14	7.15

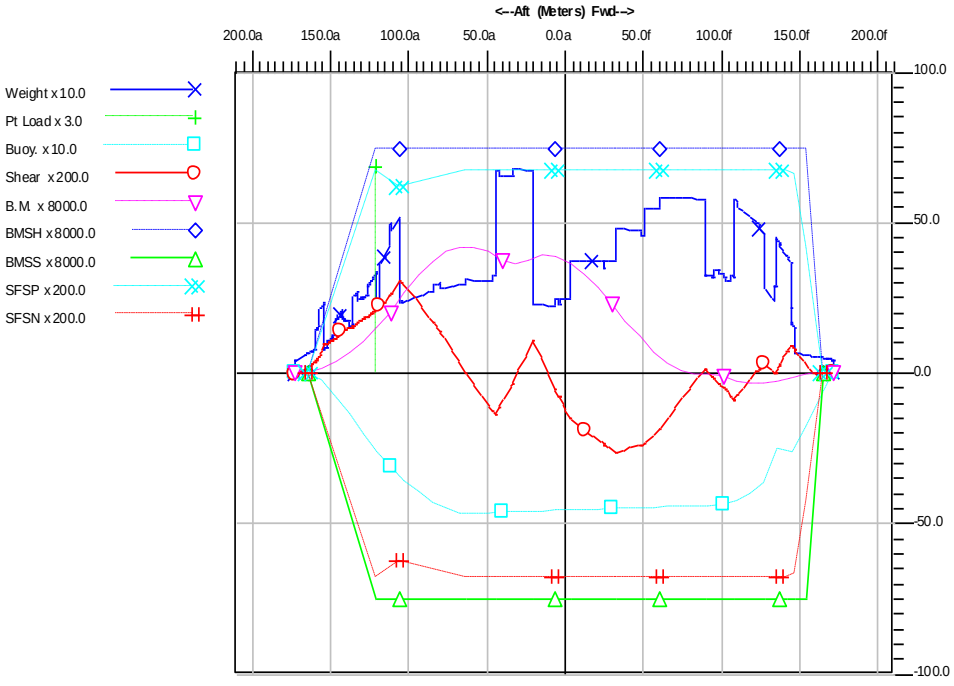
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	-2999.03	27063	22.22	4.51
101	69.618f	-2332.47	14404	17.28	2.40
102	74.378f	-1664.19	4921	12.33	0.82
103	79.138f	-994.20	-1376	7.36	0.23
104	83.898f	-322.46	-4480	2.39	0.75
105	88.658f	351.19	-4382	2.60	0.73
106	93.418f	-189.11	-3970	1.40	0.66
107	98.178f	-655.12	-5999	4.85	1.00
108	102.938f	-1161.56	-10243	8.60	1.71
109	107.698f	-1694.78	-17064	12.55	2.84
110	112.458f	-1018.79	-23432	7.55	3.91
111	117.218f	-408.82	-26790	3.03	4.47
112	121.978f	176.63	-27302	1.31	4.55
113	126.738f	677.91	-25208	5.02	4.20
114	131.563f	267.42	-22890	1.98	3.82
115	136.388f	520.47	-21735	3.86	3.62
116	141.213f	1465.47	-16898	10.86	2.82
117	146.038f	1663.12	-8534	12.57	1.42
118	148.613f	1225.50	-4810	10.52	0.80
119	151.188f	844.39	-2141	8.38	0.36
120	153.763f	535.59	-564	6.30	0.09

Longitudinal Strength At Sea Condition (0.03 deg.)

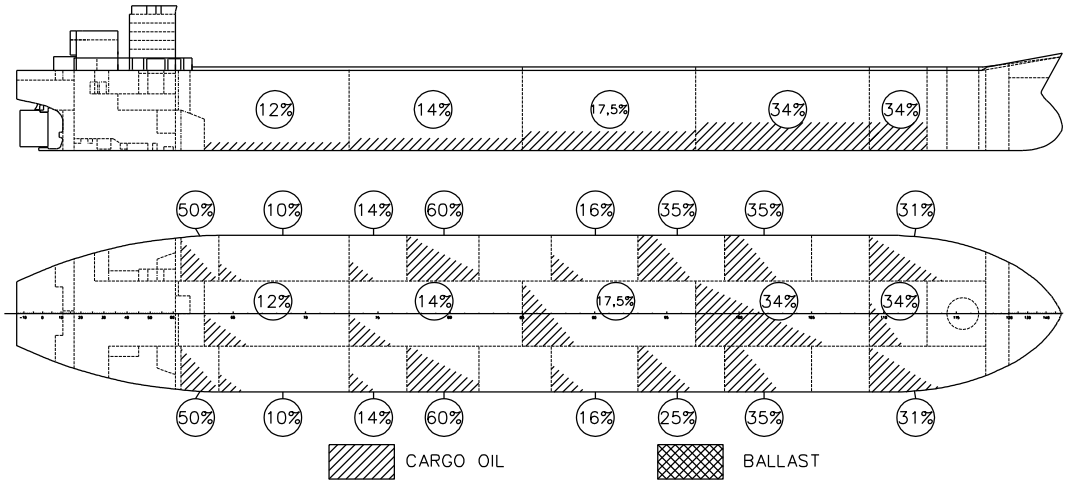
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1931.89	12763	60.46	8.99
61	120.782a	4529.43	117130	33.55	19.52
64	106.502a	6234.60	190723	49.92	31.79
73	63.662a	92.94	336491	0.69	56.08
77	44.622a	-2753.43	310860	20.40	51.81
82	20.822a	2233.84	303649	16.55	50.61
85	6.542a	-1031.41	312342	7.64	52.06
87	2.978f	-2985.42	293259	22.11	48.88
93	31.538f	-5210.26	175874	38.59	29.31
97	50.578f	-4665.37	82483	34.56	13.75
99	60.098f	-3663.89	42891	27.14	7.15
105	88.658f	351.19	-4382	2.60	0.73
109	107.698f	-1694.78	-17064	12.55	2.84
113	126.738f	677.91	-25208	5.02	4.20
114*	133.525f	107.91	-22520	0.80	3.75
115	136.388f	520.47	-21735	3.86	3.62
116	141.213f	1465.47	-16898	10.86	2.82
116*	144.075f	1849.96	-12000	13.87	2.00
117	146.038f	1663.12	-8534	12.57	1.42
120	153.763f	535.59	-564	6.30	0.09

Max. Shear	6234.60 MT	at	106.502a		49.92%Max
Max. Bending Moment	336491 MT-m	at	63.662a	(Hogging)	56.08%Max

Longitudinal Strength At Sea Condition



Condition no.15: 27% LOADING – 10% CONSUMABLES



Floating Status

Draft FP	8.378m	Heel	stbd 0.16 deg.	GM(Solid)	19.052m
Draft MS	8.458m	Equil	Yes	F/S Corr	2.397m
Draft AP	8.539m	Wind	0.0 kn	GM(Fluid)	16.655m
Trim	0.16/329.18	Wave	No	KMT	29.135 m
LCG	11.301f	VCG	10.083 m	TPcm	147.27

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	73,094.97	21.942f	0.198p	5.218
Displacement	118,544.98	11.301f	0.053s	10.083

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	470.42	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	2.40	131.422a	7.400p	29.100
RISERS	48.88	138.554f	0.000	-2.570
Total Fixed	**47,223.82**	**4.368a**	**0.549s**	**18.079**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	31.30%	3,578.75	123.968f	16.610p	5.210	6,396.64
N1A C O T.S	31.30%	3,578.75	123.961f	16.619s	5.210	6,401.83
N1 C O T .C	34.10%	3,520.14	117.216f	0.011s	4.693	14,526.42
N2 C O T .C	34.10%	10,559.37	79.124f	0.011s	4.693	43,575.09
N3 C O T .C	17.53%	5,427.77	21.990f	0.022s	2.413	43,574.84
N4 C O T .C	13.80%	4,273.29	35.137a	0.028s	1.899	43,575.09
N5 C O T .C	12.20%	3,430.21	87.986a	0.030s	1.804	36,843.88
N2A COT_SEP.P	34.70%	3,688.98	74.371f	18.296p	4.730	7,521.28
N2A COT_SEP.S	34.70%	3,688.98	74.371f	18.307s	4.730	7,521.27
N3 C O T.P	35.47%	3,770.95	45.815f	18.299p	4.832	7,520.61
N3 C O T.S	25.47%	2,707.81	45.813f	18.297s	3.483	7,520.64
N3A C O T.P	16.30%	1,732.91	17.250f	18.246p	2.245	7,520.64
N3A C O T.S	16.30%	1,732.91	17.250f	18.270s	2.245	7,520.63
N4 COT_SEP.P	60.00%	5,315.51	32.724a	18.317p	8.140	6,266.98
N4 COT_SEP.S	60.00%	5,315.51	32.724a	18.324s	8.140	6,266.99
N4A C O T.P	13.90%	982.46	54.146a	18.229p	1.921	4,999.94
N4A C O T.S	13.90%	982.46	54.146a	18.258s	1.921	4,999.94
N5 C O T.P	10.40%	1,528.61	81.701a	16.628p	1.925	7,179.80
N5 C O T.S	10.40%	1,528.61	81.679a	16.654s	1.925	7,199.73
SLOP TANK.P	50.00%	1,715.72	112.612a	15.686p	10.924	2,160.61
SLOP TANK.S	50.00%	1,715.70	112.611a	15.693s	10.924	2,166.08
Subtotals:		**70,775.41**	**22.856f**	**0.265p**	**4.730**	**281,258.94**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.139a	2.769p	0.786	174.64
DRAIN TK.C	50.00%	30.21	144.343a	0.006s	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.563a	13.335p	8.254	128.38
SEWAGE.S	50.00%	132.51	123.562a	13.341s	8.254	129.01
Subtotals:		**343.06**	**126.728a**	**0.383p**	**6.673**	**499.93**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	7.23%	21.80	156.655a	8.578p	23.438	1,025.56
POTABLE W.S	6.53%	21.80	156.806a	8.376s	23.421	1,253.04
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**65.96**	**153.690a**	**3.955s**	**22.606**	**2,278.60**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	14.72%	15.01	122.683a	12.819p	19.269	18.67
DO SETTLING 1	10.51%	15.01	127.244a	12.818p	19.110	26.14
DO DAILY.P	98.00%	80.06	131.422a	12.822p	22.434	14.95
Subtotals:		**110.09**	**129.660a**	**12.821p**	**21.549**	**59.76**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.722a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.722a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	6320.3	9.6	13.9	14447
ACOMODATIONS	311.4	28.8	33.1	2054
ACOMOD AFT	171.7	24.7	28.9	990
HELIDECK	33.5	31.0	35.3	304
V-533603	15.3	21.2	25.5	35
V-533604A	15.3	21.2	25.5	35
MODULE M01,M02,M04 (base)	123.5	25.1	29.4	854
MODULE M01	179.3	27.7	31.9	519
MODULE M02	163.6	27.8	32.0	475
MODULE M04	251.1	29.9	34.1	1709
MODULE M03(base)	37.9	23.3	27.5	246
MODULE M03	250.7	33.7	37.9	940
VE SKID SUP.P	46.7	26.0	30.2	384
SKID FORE.P	71.0	23.6	27.8	537
CRANE CV77.S	107.9	27.4	31.6	927
CRANE CV69.P	107.3	27.2	31.5	918
CRANE CV109.P	105.3	27.6	31.8	911
TURRET	442.2	30.8	35.0	4596
LAYDOW AREA	38.1	22.5	26.8	240
CO2 ROOM.S	21.7	20.4	24.6	106
V-541202	26.4	22.6	26.8	64
Fender	55.6	20.8	25.0	101
Total	**8895.8**			**31393**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	31393.0s
80.000s	31393.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.03a	8.458	-0.311	0.000	22.272 (1)	
5.00s	0.02a	8.422	1.147	0.036	20.594 (1)	
10.00s	0.01a	8.301	2.630	0.201	18.797 (1)	
15.00s	0.00f	8.099	4.161	0.497	16.893 (1)	
20.00s	0.03f	7.780	5.663	0.926	14.925 (1)	
30.00s	0.07f	6.382	7.467	2.094	11.232 (1)	
40.00s	0.09f	4.067	8.216	3.474	7.895 (1)	
42.04s	0.10f	3.518	8.246	3.767	7.240 (1)	MaxRa
50.00s	0.12f	1.303	7.838	4.893	4.652 (1)	
60.00s	0.15f	-1.569	6.395	6.149	1.369 (1)	
64.24s	0.18f	-2.801	5.527	6.591	-0.001 (1)	FldPt
70.00s	0.21f	-4.456	4.160	7.079	-1.832 (1)	
80.00s	0.28f	-7.252	1.357	7.569	-4.896 (1)	

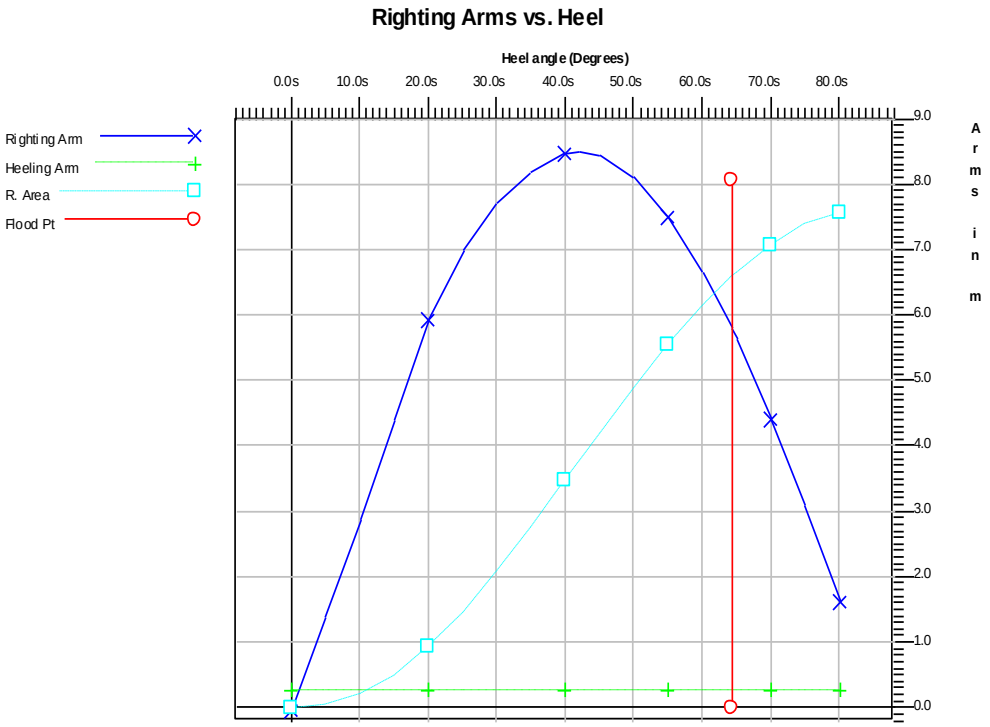
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	22.272

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	23.199	21.799	Yes



Longitudinal Strength At Sea Condition (stbd 0.16 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1344.39	11141	42.07	7.84
20	151.942a	1482.52	14357	38.03	8.29
24	148.902a	1703.22	19217	35.23	8.94
28	145.862a	1891.54	24699	32.77	9.63
32	142.822a	2051.25	30722	30.58	10.30
36	139.782a	2108.72	37065	27.58	10.91
40	136.742a	2063.66	43441	24.05	11.39
44	133.702a	2173.27	49865	22.83	11.79
48	130.662a	2404.78	56757	23.00	12.21
52	127.622a	2559.08	64342	22.46	12.71
56	124.582a	2766.77	72404	22.44	13.21
60	121.542a	2995.97	81165	22.58	13.77
61	120.782a	3260.71	83545	24.15	13.92
62	116.022a	3585.04	99479	27.24	16.58
63	111.262a	4283.65	118053	33.40	19.68
64	106.502a	5201.14	140596	41.64	23.43
65	101.742a	4769.18	164362	37.84	27.39
66	96.982a	4272.28	185908	33.60	30.98
67	92.222a	3721.89	204959	29.02	34.16
68	87.462a	3124.87	221277	24.15	36.88
69	82.702a	2535.22	234711	19.43	39.12
70	77.942a	1915.76	245374	14.55	40.90
71	73.182a	1229.02	252871	9.26	42.15
72	68.422a	528.26	257054	3.95	42.84
73	63.662a	-178.29	257901	1.32	42.98
74	58.902a	-839.36	255483	6.22	42.58
75	54.142a	-1499.05	249922	11.10	41.65
76	49.382a	-2157.36	241224	15.98	40.20
77	44.622a	-2768.60	229451	20.51	38.24
78	39.862a	-1742.37	218773	12.91	36.46
79	35.102a	-760.21	212821	5.63	35.47
80	30.342a	307.94	211697	2.28	35.28
81	25.582a	1403.73	215777	10.40	35.96
82	20.822a	2495.63	225064	18.49	37.51
83	16.062a	1458.46	234481	10.80	39.08
84	11.302a	417.76	238953	3.09	39.83
85	6.542a	-626.48	238463	4.64	39.74
86	1.782a	-1577.43	233222	11.68	38.87
87	2.978f	-2521.71	223469	18.68	37.24
88	7.738f	-2883.27	210609	21.36	35.10
89	12.498f	-3240.80	196037	24.01	32.67
90	17.258f	-3594.29	179773	26.62	29.96
91	22.018f	-3943.75	161836	29.21	26.97
92	26.778f	-4285.28	142243	31.74	23.71
93	31.538f	-4616.24	121066	34.19	20.18
94	36.298f	-4449.43	99497	32.96	16.58
95	41.058f	-4288.84	78707	31.77	13.12
96	45.818f	-4134.46	58667	30.63	9.78
97	50.578f	-4029.16	39294	29.85	6.55
98	55.338f	-3533.14	21300	26.17	3.55
99	60.098f	-3035.75	5670	22.49	0.95

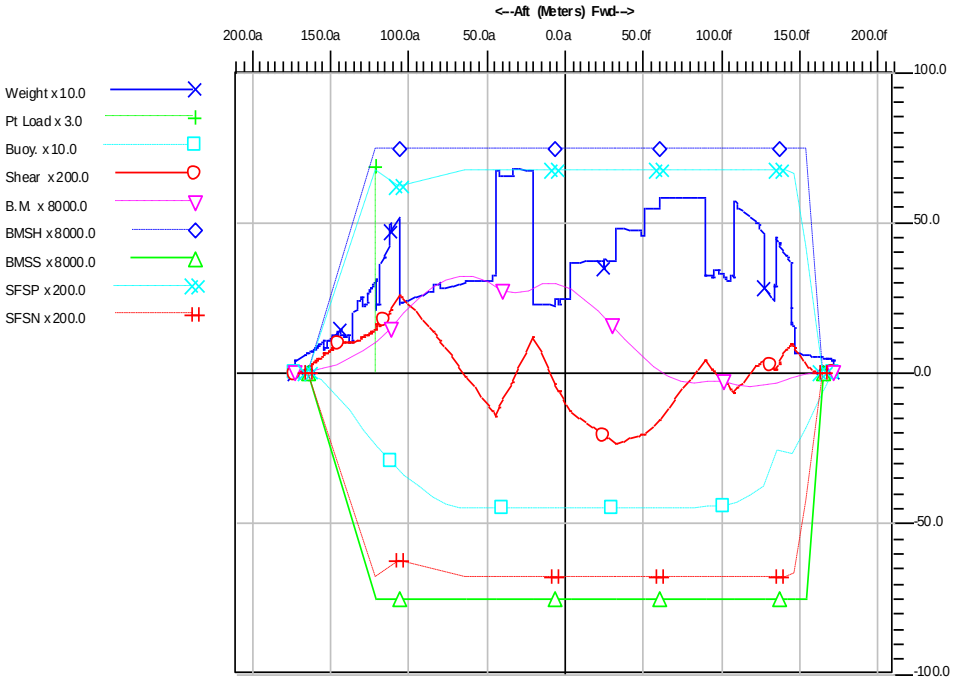
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	-2384.93	-7226	17.67	1.20
101	69.618f	-1732.73	-17022	12.84	2.84
102	74.378f	-1079.15	-23710	7.99	3.95
103	79.138f	-424.21	-27283	3.14	4.55
104	83.898f	232.17	-27736	1.72	4.62
105	88.658f	890.11	-25061	6.59	4.18
106	93.418f	328.22	-22159	2.43	3.69
107	98.178f	-161.30	-21806	1.19	3.63
108	102.938f	-693.16	-23785	5.13	3.96
109	107.698f	-1253.58	-28465	9.29	4.74
110	112.458f	-620.21	-32860	4.59	5.48
111	117.218f	-52.54	-34447	0.39	5.74
112	121.978f	491.22	-33388	3.64	5.56
113	126.738f	951.76	-29919	7.05	4.99
114	131.563f	498.46	-26409	3.69	4.40
115	136.388f	712.35	-24264	5.28	4.04
116	141.213f	1626.38	-18603	12.05	3.10
117	146.038f	1789.65	-9567	13.53	1.59
118	148.613f	1331.01	-5559	11.42	0.93
119	151.188f	930.10	-2657	9.23	0.44
120	153.763f	603.46	-908	7.10	0.15

Longitudinal Strength At Sea Condition (stbd 0.16 deg.)

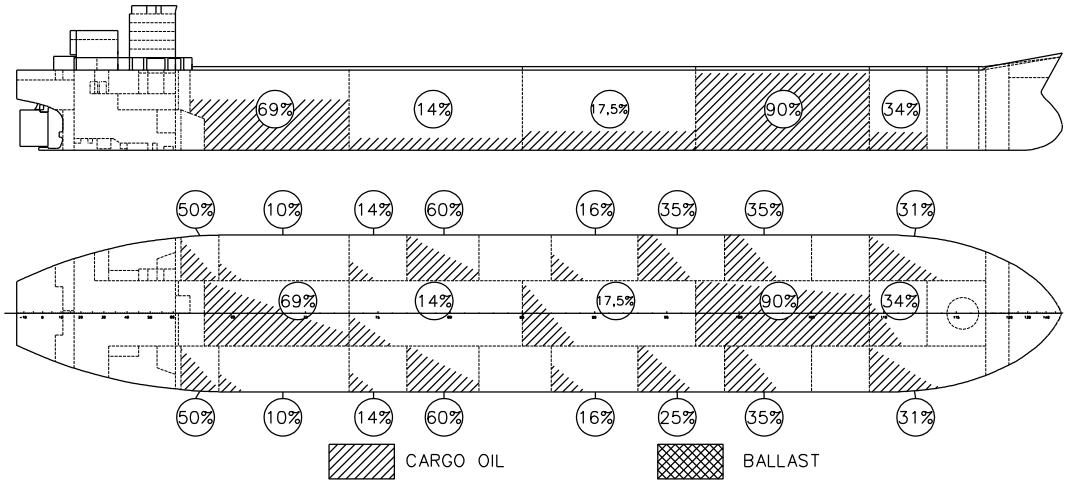
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1344.39	11141	42.07	7.84
61	120.782a	3260.71	83545	24.15	13.92
64	106.502a	5201.14	140596	41.64	23.43
73	63.662a	-178.29	257901	1.32	42.98
77	44.622a	-2768.60	229451	20.51	38.24
82	20.822a	2495.63	225064	18.49	37.51
85	6.542a	-626.48	238463	4.64	39.74
87	2.978f	-2521.71	223469	18.68	37.24
93	31.538f	-4616.24	121066	34.19	20.18
97	50.578f	-4029.16	39294	29.85	6.55
99	60.098f	-3035.75	5670	22.49	0.95
105	88.658f	890.11	-25061	6.59	4.18
109	107.698f	-1253.58	-28465	9.29	4.74
113	126.738f	951.76	-29919	7.05	4.99
114*	133.525f	321.67	-25614	2.38	4.27
115	136.388f	712.35	-24264	5.28	4.04
116	141.213f	1626.38	-18603	12.05	3.10
116*	144.075f	1991.79	-13287	14.93	2.21
117	146.038f	1789.65	-9567	13.53	1.59
120	153.763f	603.46	-908	7.10	0.15

Max. Shear	5201.14 MT	at	106.502a		41.64%Max
Max. Bending Moment	257901 MT-m	at	63.662a	(Hogging)	42.98%Max

Longitudinal Strength At Sea Condition



Condition no.16: 40% LOADING – 100% CONSUMABLES



Floating Status

Draft FP	9.747m	Heel	0.01 deg.	GM(Solid)	13.990m
Draft MS	10.852m	Equil	Yes	F/S Corr	1.876m
Draft AP	11.956m	Wind	0.0 kn	GM(Fluid)	12.114m
Trim	aft 2.21/329.18	Wave	No	KMT	25.167 m
LCG	6.807f	VCG	11.177 m	TPcm	149.45

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	107,727.63	12.132f	0.198p	8.337
Displacement	153,177.63	6.807f	0.004p	11.177

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	459.86	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	20.40	131.422a	7.400p	29.100
RISERS	48.51	138.554f	0.000	-2.570
Total Fixed	**47,230.89**	**4.450a**	**0.546s**	**18.088**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	31.30%	3,578.75	123.880f	16.623p	5.210	6,399.24
N1A C O T.S	31.30%	3,578.75	123.880f	16.622s	5.210	6,398.75
N1 C O T .C	34.10%	3,520.14	117.196f	0.001p	4.693	14,526.57
N2 C O T .C	89.70%	27,776.41	79.064f	0.000	12.346	43,575.57
N3 C O T .C	17.53%	5,429.79	21.640f	0.002p	2.415	43,575.32
N4 C O T .C	13.80%	4,273.29	35.582a	0.003p	1.901	43,575.55
N5 C O T .C	68.50%	19,259.79	89.359a	0.024s	9.923	42,315.97
N2A COT_SEP.P	34.70%	3,688.98	74.326f	18.302p	4.731	7,521.34
N2A COT_SEP.S	34.70%	3,688.98	74.326f	18.301s	4.731	7,521.32
N3 C O T.P	35.47%	3,770.95	45.770f	18.305p	4.832	7,520.69
N3 C O T.S	25.47%	2,707.81	45.752f	18.288s	3.483	7,520.71
N3A C O T.P	16.30%	1,732.91	17.154f	18.259p	2.246	7,520.71
N3A C O T.S	16.30%	1,732.91	17.154f	18.257s	2.246	7,520.72
N4 COT_SEP.P	60.00%	5,315.51	32.742a	18.321p	8.140	6,267.05
N4 COT_SEP.S	60.00%	5,315.51	32.742a	18.320s	8.140	6,267.05
N4A C O T.P	13.90%	982.46	54.196a	18.245p	1.921	4,999.99
N4A C O T.S	13.90%	982.46	54.196a	18.242s	1.921	4,999.99
N5 C O T.P	10.40%	1,528.60	81.967a	16.619p	1.926	7,198.27
N5 C O T.S	10.40%	1,528.60	81.969a	16.616s	1.926	7,196.42
SLOP TANK.P	50.00%	1,715.72	112.622a	15.689p	10.925	2,164.00
SLOP TANK.S	50.00%	1,715.70	112.621a	15.688s	10.925	2,163.49
Subtotals:		**103,824.03**	**14.953f**	**0.184p**	**7.832**	**286,748.75**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.159a	2.778p	0.786	175.41
DRAIN TK.C	50.00%	30.21	144.352a	0.000	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.568a	13.338p	8.255	128.67
SEWAGE.S	50.00%	132.51	123.568a	13.337s	8.255	128.61
Subtotals:		**343.06**	**126.735a**	**0.388p**	**6.673**	**500.60**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	100.00%	301.39	156.725a	9.274p	25.423	0.00
POTABLE W.S	100.00%	333.92	156.834a	8.760s	25.421	0.00
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**657.67**	**156.476a**	**0.602s**	**25.271**	**0.00**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	98.00%	99.98	122.683a	12.823p	22.434	18.67
DO SETTLING 1	98.00%	139.97	127.244a	12.823p	22.434	26.14
DO DAILY.P	98.00%	80.06	131.423a	12.823p	22.434	14.95
DO STORAGE.P	97.98%	517.29	141.439a	13.613p	23.178	77.63
DO STORAGE.S	98.00%	258.02	137.888a	12.540s	22.974	31.25
Subtotals:		**1,095.33**	**136.344a**	**7.221p**	**22.913**	**168.63**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.723a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.723a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	5593.4	8.5	13.9	12773
ACOMODATIONS	311.4	26.6	32.0	1985
ACOMOD AFT	171.7	22.5	27.8	952
HELIDECK	33.5	28.8	34.2	270
V-533603	15.3	19.0	24.3	34
V-533604A	15.3	19.0	24.3	34
MODULE M01,M02,M04 (base)	123.5	22.9	28.2	822
MODULE M01	179.3	25.5	30.8	501
MODULE M02	163.6	25.5	30.9	458
MODULE M04	251.1	27.7	33.0	1653
MODULE M03(base)	37.9	21.0	26.4	236
MODULE M03	250.7	31.5	36.8	912
VE SKID SUP.P	46.7	23.8	29.1	370
SKID FORE.P	71.0	21.3	26.7	515
CRANE CV77.S	107.9	25.1	30.5	894
CRANE CV69.P	107.3	25.0	30.3	885
CRANE CV109.P	105.3	25.4	30.7	879
TURRET	442.2	28.6	33.9	4078
LAYDOW AREA	38.1	20.3	25.6	230
CO2 ROOM.S	21.7	18.1	23.5	102
V-541202	26.4	20.3	25.7	61
Fender	55.6	18.5	23.9	96
Total	**8168.9**			**28739**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	28739.0s
80.000s	28739.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.38a	10.851	-0.184	0.000	19.089 (1)	
5.00s	0.38a	10.807	0.876	0.030	17.422 (1)	
10.00s	0.36a	10.663	1.962	0.154	15.661 (1)	
15.00s	0.34a	10.423	3.098	0.374	13.813 (1)	
20.00s	0.30a	10.082	4.313	0.697	11.898 (1)	
30.00s	0.22a	8.862	6.505	1.655	8.117 (1)	
40.00s	0.17a	6.795	7.442	2.895	4.591 (1)	
40.92s	0.17a	6.586	7.449	3.015	4.262 (1)	MaxRa
50.00s	0.14a	4.433	7.004	4.172	0.960 (1)	
52.62s	0.13a	3.779	6.732	4.486	0.000 (1)	FldPt
60.00s	0.12a	1.895	5.696	5.290	-2.695 (1)	
70.00s	0.10a	-0.725	3.750	6.123	-6.263 (1)	
80.00s	0.07a	-3.352	1.324	6.572	-9.587 (1)	

Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

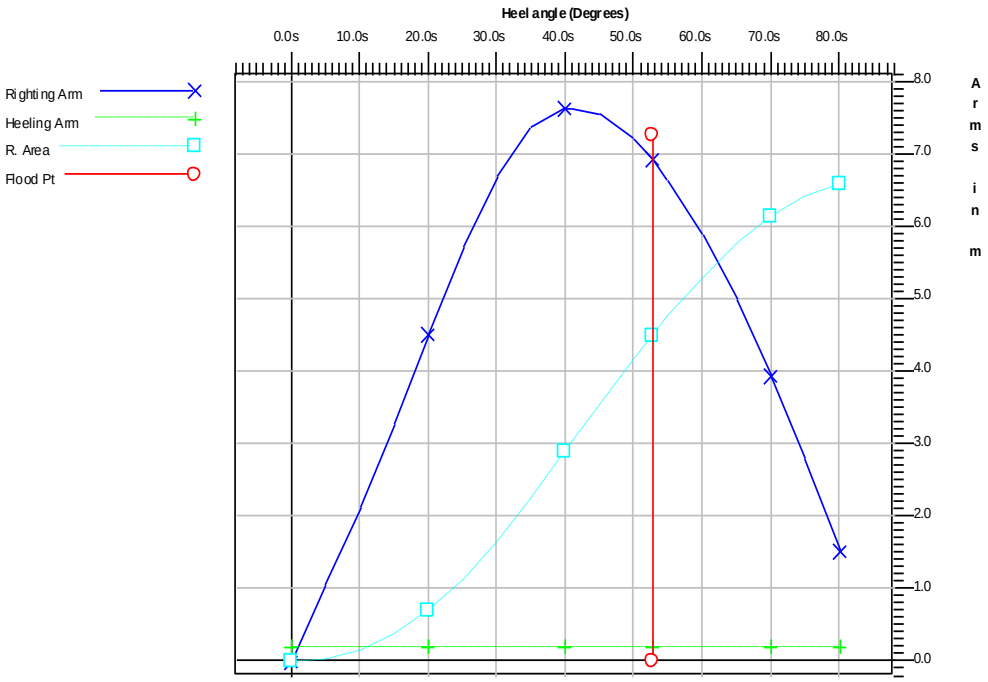
Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	19.089

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	27.038	25.638	Yes

Righting Arms vs. Heel



Longitudinal Strength At Sea Condition (0.01 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1903.42	12889	59.57	9.08
20	151.942a	1996.86	17368	51.23	10.02
24	148.902a	2129.54	23715	44.05	11.04
28	145.862a	2277.09	30426	39.45	11.86
32	142.822a	2460.39	37707	36.68	12.65
36	139.782a	2493.41	45312	32.61	13.34
40	136.742a	2394.18	52831	27.90	13.85
44	133.702a	2428.17	60146	25.51	14.22
48	130.662a	2435.38	67618	23.29	14.55
52	127.622a	2356.59	74975	20.69	14.81
56	124.582a	2320.68	82107	18.82	14.98
60	121.542a	2278.88	89154	17.18	15.12
61	120.782a	2472.51	90974	18.31	15.16
62	116.022a	2555.99	102429	19.42	17.07
63	111.262a	3555.18	116593	27.72	19.43
64	106.502a	5292.25	137709	42.37	22.95
65	101.742a	5663.02	163905	44.94	27.32
66	96.982a	5944.48	191642	46.75	31.94
67	92.222a	6153.41	220542	47.97	36.76
68	87.462a	6301.07	250286	48.70	41.71
69	82.702a	6445.04	280664	49.38	46.78
70	77.942a	6552.11	311744	49.78	51.96
71	73.182a	6588.77	343107	49.63	57.18
72	68.422a	6610.89	374607	49.38	62.43
73	63.662a	6627.68	406195	49.09	67.70
74	58.902a	5286.20	434630	39.16	72.44
75	54.142a	3946.92	456684	29.24	76.11
76	49.382a	2609.85	472368	19.33	78.73
77	44.622a	1320.69	481748	9.78	80.29
78	39.862a	1687.27	489041	12.50	81.51
79	35.102a	2010.60	497921	14.89	82.99
80	30.342a	2420.74	508494	17.93	84.75
81	25.582a	2859.35	521142	21.18	86.86
82	20.822a	3294.88	535871	24.41	89.31
83	16.062a	1613.89	547634	11.95	91.27
84	11.302a	-65.93	551397	0.49	91.90
85	6.542a	-1744.56	547168	12.92	91.19
86	1.782a	-3291.72	535260	24.38	89.21
87	2.978f	-4827.51	516013	35.76	86.00
88	7.738f	-5766.13	490878	42.71	81.81
89	12.498f	-6699.91	461288	49.63	76.88
90	17.258f	-7628.83	427263	56.51	71.21
91	22.018f	-8552.90	388829	63.35	64.80
92	26.778f	-9468.21	346004	70.13	57.67
93	31.538f	-10372.14	298870	76.83	49.81
94	36.298f	-10754.14	248671	79.66	41.45
95	41.058f	-11141.53	196642	82.53	32.77
96	45.818f	-11534.32	142756	85.44	23.79
97	50.578f	-11975.34	86934	88.71	14.49
98	55.338f	-10556.99	33386	78.20	5.56
99	60.098f	-9136.46	-13405	67.68	2.23

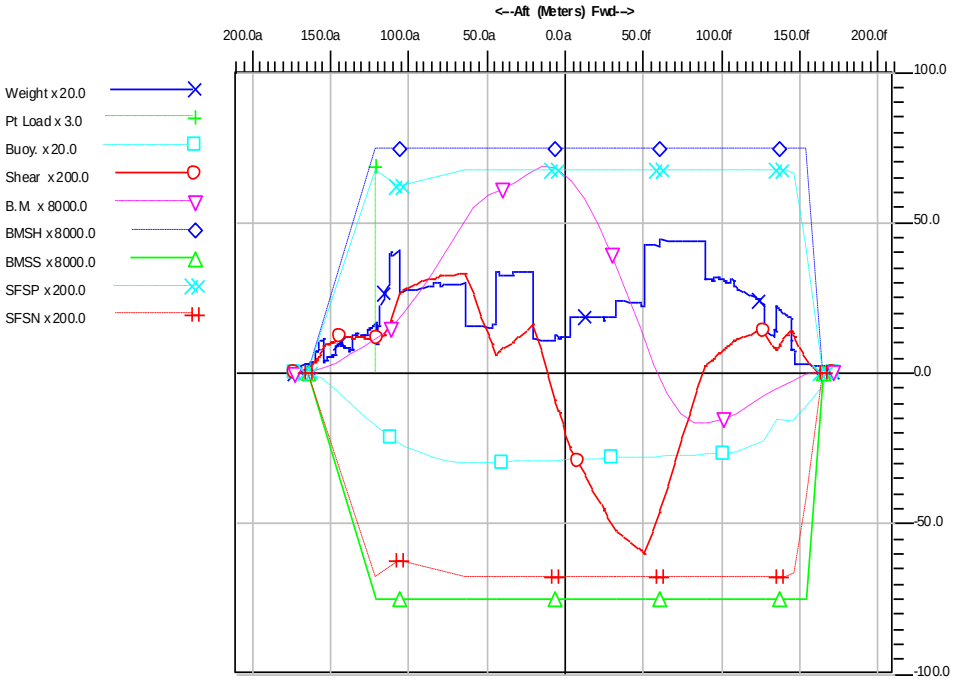
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	-7538.31	-53011	55.84	8.84
101	69.618f	-5937.98	-85005	43.99	14.17
102	74.378f	-4335.45	-109377	32.11	18.23
103	79.138f	-2730.72	-126115	20.23	21.02
104	83.898f	-1123.75	-135209	8.32	22.53
105	88.658f	485.60	-136649	3.60	22.77
106	93.418f	889.60	-133300	6.59	22.22
107	98.178f	1370.68	-127892	10.15	21.32
108	102.938f	1814.20	-120184	13.44	20.03
109	107.698f	2235.21	-110521	16.56	18.42
110	112.458f	2457.66	-99214	18.20	16.54
111	117.218f	2620.93	-87040	19.41	14.51
112	121.978f	2768.98	-74126	20.51	12.35
113	126.738f	2845.02	-60660	21.07	10.11
114	131.563f	2024.10	-48834	14.99	8.14
115	136.388f	1915.61	-40071	14.19	6.68
116	141.213f	2582.12	-29138	19.13	4.86
117	146.038f	2490.34	-16011	18.82	2.67
118	148.613f	1900.64	-10329	16.31	1.72
119	151.188f	1381.14	-6075	13.71	1.01
120	153.763f	952.65	-3324	11.21	0.55

Longitudinal Strength At Sea Condition (0.01 deg.)

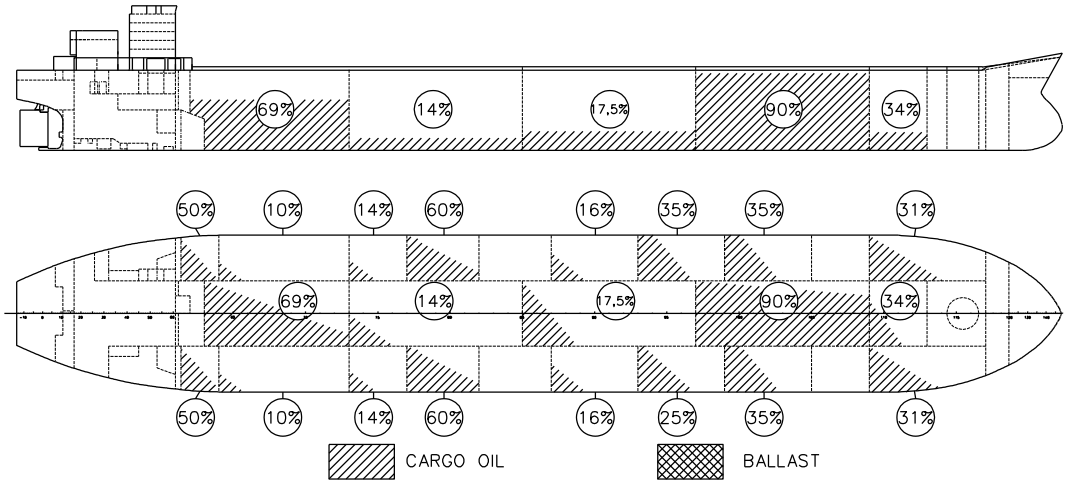
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1903.42	12889	59.57	9.08
61	120.782a	2472.51	90974	18.31	15.16
64	106.502a	5292.25	137709	42.37	22.95
73	63.662a	6627.68	406195	49.09	67.70
77	44.622a	1320.69	481748	9.78	80.29
82	20.822a	3294.88	535871	24.41	89.31
85	6.542a	-1744.56	547168	12.92	91.19
87	2.978f	-4827.51	516013	35.76	86.00
93	31.538f	-10372.14	298870	76.83	49.81
97	50.578f	-11975.34	86934	88.71	14.49
99	60.098f	-9136.46	-13405	67.68	2.23
105	88.658f	485.60	-136649	3.60	22.77
109	107.698f	2235.21	-110521	16.56	18.42
113	126.738f	2845.02	-60660	21.07	10.11
114*	133.525f	1703.59	-45157	12.62	7.53
115	136.388f	1915.61	-40071	14.19	6.68
116	141.213f	2582.12	-29138	19.13	4.86
116*	144.075f	2802.85	-21246	21.01	3.54
117	146.038f	2490.34	-16011	18.82	2.67
120	153.763f	952.65	-3324	11.21	0.55

Max. Shear	-11975.36 MT	at	50.578f		88.71%Max
Max. Bending Moment	551397 MT-m	at	11.302a	(Hogging)	91.90%Max

Longitudinal Strength At Sea Condition



Condition no.17: 40% LOADING – 10% CONSUMABLES



Floating Status

Draft FP	10.019m	Heel	stbd 0.19 deg.	GM(Solid)	14.224m
Draft MS	10.723m	Equil	Yes	F/S Corr	1.910m
Draft AP	11.428m	Wind	0.0 kn	GM(Fluid)	12.313m
Trim	aft 1.41/329.18	Wave	No	KMT	25.265 m
LCG	8.421f	VCG	11.041 m	TPcm	149.14

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	106,126.74	14.518f	0.130p	8.101
Displacement	151,576.75	8.421f	0.045s	11.041

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	457.76	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	2.40	131.422a	7.400p	29.100
RISERS	48.43	138.554f	0.000	-2.570
Total Fixed	**47,210.71**	**4.408a**	**0.549s**	**18.085**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	31.30%	3,578.75	123.917f	16.613p	5.210	6,395.97
N1A C O T.S	31.30%	3,578.75	123.909f	16.625s	5.210	6,402.28
N1 C O T .C	34.10%	3,520.14	117.204f	0.013s	4.693	14,526.61
N2 C O T .C	89.70%	27,776.41	79.091f	0.005s	12.346	43,575.68
N3 C O T .C	17.52%	5,426.01	21.777f	0.026s	2.412	43,575.45
N4 C O T .C	13.80%	4,273.29	35.408a	0.033s	1.900	43,575.69
N5 C O T .C	68.50%	19,259.79	89.325a	0.032s	9.923	42,316.15
N2A COT_SEP.P	34.70%	3,688.98	74.344f	18.295p	4.730	7,521.37
N2A COT_SEP.S	34.70%	3,688.98	74.344f	18.308s	4.730	7,521.35
N3 C O T.P	35.47%	3,770.95	45.788f	18.298p	4.832	7,520.71
N3 C O T.S	25.47%	2,707.81	45.776f	18.298s	3.483	7,520.72
N3A C O T.P	16.30%	1,732.91	17.192f	18.244p	2.246	7,520.71
N3A C O T.S	16.30%	1,732.91	17.192f	18.272s	2.246	7,520.75
N4 COT_SEP.P	60.00%	5,315.51	32.735a	18.317p	8.140	6,267.06
N4 COT_SEP.S	60.00%	5,315.51	32.735a	18.325s	8.140	6,267.06
N4A C O T.P	13.90%	982.46	54.177a	18.227p	1.921	5,000.01
N4A C O T.S	13.90%	982.46	54.177a	18.260s	1.921	5,000.00
N5 C O T.P	10.40%	1,528.61	81.872a	16.612p	1.925	7,182.79
N5 C O T.S	10.40%	1,528.61	81.846a	16.642s	1.925	7,206.01
SLOP TANK.P	50.00%	1,715.72	112.618a	15.685p	10.925	2,160.39
SLOP TANK.S	50.00%	1,715.70	112.617a	15.693s	10.925	2,166.81
Subtotals:		**103,820.25**	**14.991f**	**0.174p**	**7.832**	**286,743.53**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.152a	2.766p	0.786	174.11
DRAIN TK.C	50.00%	30.21	144.348a	0.007s	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.566a	13.335p	8.255	128.29
SEWAGE.S	50.00%	132.51	123.565a	13.341s	8.255	129.03
Subtotals:		**343.06**	**126.732a**	**0.383p**	**6.673**	**499.35**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	7.23%	21.80	156.682a	8.571p	23.438	1,025.27
POTABLE W.S	6.53%	21.80	156.843a	8.421s	23.421	1,253.81
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**65.96**	**153.711a**	**3.972s**	**22.606**	**2,279.08**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	14.72%	15.01	122.687a	12.818p	19.269	18.67
DO SETTLING 1	10.51%	15.01	127.255a	12.817p	19.110	26.14
DO DAILY.P	98.00%	80.06	131.422a	12.822p	22.434	14.95
Subtotals:		**110.09**	**129.663a**	**12.821p**	**21.549**	**59.76**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.723a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.723a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	5593.4	8.5	13.9	12773
ACOMODATIONS	311.4	26.6	32.0	1985
ACOMOD AFT	171.7	22.5	27.8	952
HELIDECK	33.5	28.8	34.2	270
V-533603	15.3	19.0	24.3	34
V-533604A	15.3	19.0	24.3	34
MODULE M01,M02,M04 (base)	123.5	22.9	28.2	822
MODULE M01	179.3	25.5	30.8	501
MODULE M02	163.6	25.5	30.9	458
MODULE M04	251.1	27.7	33.0	1653
MODULE M03(base)	37.9	21.0	26.4	236
MODULE M03	250.7	31.5	36.8	912
VE SKID SUP.P	46.7	23.8	29.1	370
SKID FORE.P	71.0	21.3	26.7	515
CRANE CV77.S	107.9	25.1	30.5	894
CRANE CV69.P	107.3	25.0	30.3	885
CRANE CV109.P	105.3	25.4	30.7	879
TURRET	442.2	28.6	33.9	4078
LAYDOW AREA	38.1	20.3	25.6	230
CO2 ROOM.S	21.7	18.1	23.5	102
V-541202	26.4	20.3	25.7	61
Fender	55.6	18.5	23.9	96
Total	**8168.9**			**28739**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	28739.0s
80.000s	28739.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.25a	10.723	-0.229	0.000	19.525 (1)	
5.00s	0.24a	10.680	0.850	0.027	17.857 (1)	
10.00s	0.23a	10.537	1.954	0.149	16.091 (1)	
15.00s	0.20a	10.300	3.109	0.370	14.235 (1)	
20.00s	0.17a	9.963	4.344	0.694	12.309 (1)	
30.00s	0.09a	8.744	6.546	1.659	8.520 (1)	
40.00s	0.03a	6.664	7.506	2.908	5.024 (1)	
41.14s	0.03a	6.404	7.516	3.057	4.622 (1)	MaxRa
50.00s	0.01f	4.287	7.089	4.198	1.436 (1)	
53.97s	0.03f	3.290	6.661	4.675	-0.001 (1)	FldPt
60.00s	0.04f	1.738	5.792	5.333	-2.181 (1)	
70.00s	0.07f	-0.898	3.848	6.182	-5.707 (1)	
80.00s	0.11f	-3.536	1.416	6.648	-8.998 (1)	

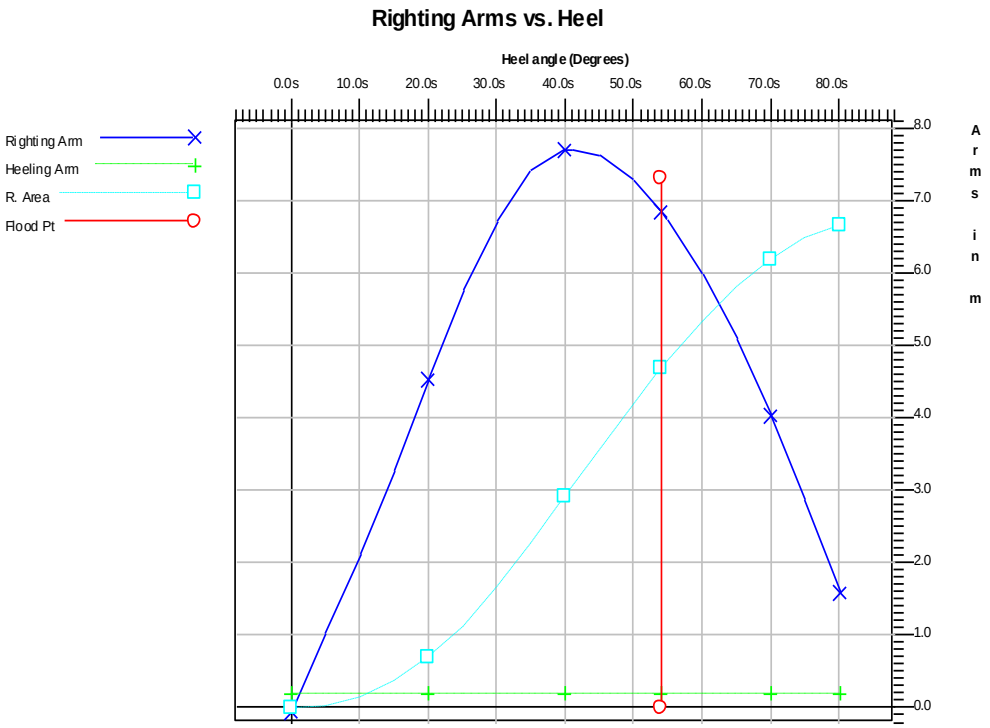
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	19.525

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	27.179	25.779	Yes



Longitudinal Strength At Sea Condition (stbd 0.18 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1318.32	11278	41.26	7.94
20	151.942a	1419.63	14417	36.42	8.32
24	148.902a	1567.19	19012	32.41	8.85
28	145.862a	1654.32	23963	28.66	9.34
32	142.822a	1685.17	29104	25.12	9.76
36	139.782a	1587.15	34133	20.76	10.05
40	136.742a	1361.33	38684	15.86	10.14
44	133.702a	1263.89	42636	13.28	10.08
48	130.662a	1269.47	46519	12.14	10.01
52	127.622a	1173.91	50307	10.30	9.94
56	124.582a	1110.59	53780	9.01	9.81
60	121.542a	1048.78	57098	7.91	9.68
61	120.782a	1237.79	57977	9.17	9.66
62	116.022a	1396.41	63704	10.61	10.62
63	111.262a	2473.21	72501	19.28	12.08
64	106.502a	4292.59	88631	34.37	14.77
65	101.742a	4743.12	110227	37.64	18.37
66	96.982a	5106.17	133750	40.16	22.29
67	92.222a	5397.95	158826	42.08	26.47
68	87.462a	5629.26	185143	43.51	30.86
69	82.702a	5857.44	212494	44.88	35.42
70	77.942a	6048.98	240948	45.95	40.16
71	73.182a	6170.05	270087	46.48	45.01
72	68.422a	6276.39	299766	46.88	49.96
73	63.662a	6377.14	329931	47.24	54.99
74	58.902a	5097.49	357290	37.76	59.55
75	54.142a	3819.71	378562	28.29	63.09
76	49.382a	2543.82	393757	18.84	65.63
77	44.622a	1315.52	402938	9.74	67.16
78	39.862a	1735.82	410304	12.86	68.38
79	35.102a	2112.56	419512	15.65	69.92
80	30.342a	2575.79	430667	19.08	71.78
81	25.582a	3067.16	444149	22.72	74.02
82	20.822a	3555.14	459962	26.33	76.66
83	16.062a	1921.68	473047	14.23	78.84
84	11.302a	287.57	478356	2.13	79.73
85	6.542a	-1347.21	475885	9.98	79.31
86	1.782a	-2865.67	465907	21.23	77.65
87	2.978f	-4374.60	448723	32.40	74.79
88	7.738f	-5292.00	425765	39.20	70.96
89	12.498f	-6204.87	398451	45.96	66.41
90	17.258f	-7113.21	366802	52.69	61.13
91	22.018f	-8017.01	330841	59.39	55.14
92	26.778f	-8912.38	290584	66.02	48.43
93	31.538f	-9796.69	246112	72.57	41.02
94	36.298f	-10168.50	198648	75.32	33.11
95	41.058f	-10546.02	149400	78.12	24.90
96	45.818f	-10929.25	98341	80.96	16.39
97	50.578f	-11361.04	45391	84.16	7.57
98	55.338f	-9946.45	-5271	73.68	0.88
99	60.098f	-8529.99	-49195	63.19	8.20

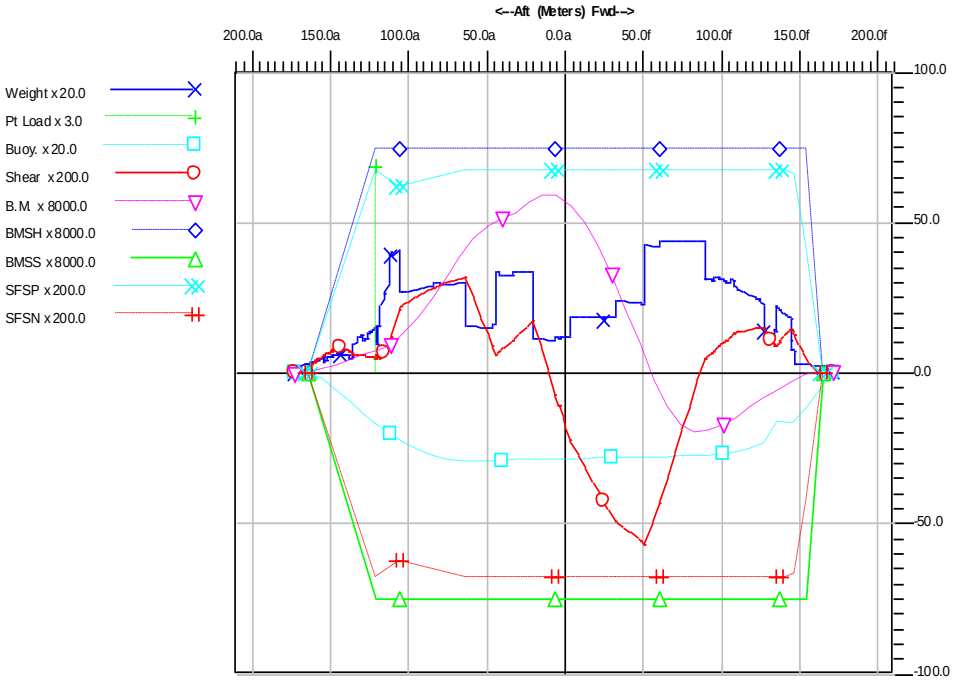
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	-6945.36	-85977	51.45	14.33
101	69.618f	-5358.86	-115211	39.70	19.20
102	74.378f	-3770.49	-136890	27.93	22.81
103	79.138f	-2180.23	-151003	16.15	25.17
104	83.898f	-588.06	-157542	4.36	26.26
105	88.658f	1006.18	-156497	7.45	26.08
106	93.418f	1389.41	-150749	10.29	25.12
107	98.178f	1847.88	-143045	13.69	23.84
108	102.938f	2266.95	-133152	16.79	22.19
109	107.698f	2661.76	-121426	19.72	20.24
110	112.458f	2843.15	-108217	21.06	18.04
111	117.218f	2965.62	-94335	21.97	15.72
112	121.978f	3073.37	-79906	22.77	13.32
113	126.738f	3109.85	-65116	23.04	10.85
114	131.563f	2247.27	-52143	16.65	8.69
115	136.388f	2100.49	-42431	15.56	7.07
116	141.213f	2736.54	-30710	20.27	5.12
117	146.038f	2611.09	-16946	19.74	2.82
118	148.613f	2000.85	-10996	17.17	1.83
119	151.188f	1462.09	-6526	14.51	1.09
120	153.763f	1016.36	-3615	11.96	0.60

Longitudinal Strength At Sea Condition (stbd 0.18 deg.)

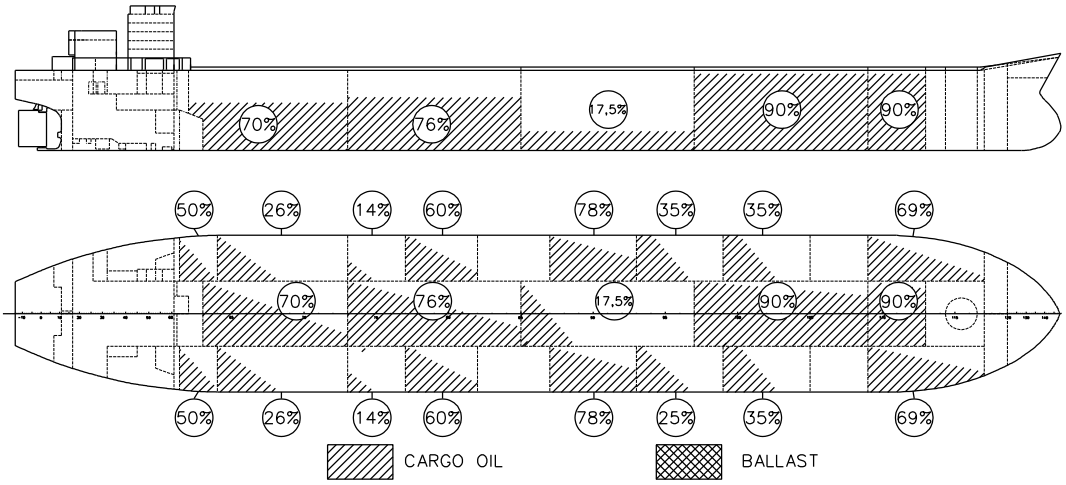
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1318.32	11278	41.26	7.94
61	120.782a	1237.79	57977	9.17	9.66
64	106.502a	4292.59	88631	34.37	14.77
73	63.662a	6377.14	329931	47.24	54.99
77	44.622a	1315.52	402938	9.74	67.16
82	20.822a	3555.14	459962	26.33	76.66
85	6.542a	-1347.21	475885	9.98	79.31
87	2.978f	-4374.60	448723	32.40	74.79
93	31.538f	-9796.69	246112	72.57	41.02
97	50.578f	-11361.04	45391	84.16	7.57
99	60.098f	-8529.99	-49195	63.19	8.20
105	88.658f	1006.18	-156497	7.45	26.08
109	107.698f	2661.76	-121426	19.72	20.24
113	126.738f	3109.85	-65116	23.04	10.85
114*	133.525f	1909.90	-48057	14.15	8.01
115	136.388f	2100.49	-42431	15.56	7.07
116	141.213f	2736.54	-30710	20.27	5.12
116*	144.075f	2938.55	-22420	22.03	3.74
117	146.038f	2611.09	-16946	19.74	2.82
120	153.763f	1016.36	-3615	11.96	0.60

Max. Shear	-11361.06 MT	at	50.578f		84.16%Max
Max. Bending Moment	478356 MT-m	at	11.302a	(Hogging)	79.73%Max

Longitudinal Strength At Sea Condition



Condition no.18: 60% LOADING – 100% CONSUMABLES



Floating Status

Draft FP	13.912m	Heel	0.02 deg.	GM(Solid)	10.684m
Draft MS	14.263m	Equil	Yes	F/S Corr	1.427m
Draft AP	14.614m	Wind	0.0 kn	GM(Fluid)	9.257m
Trim	aft 0.70/329.18	Wave	No	KMT	22.284 m
LCG	9.253f	VCG	11.599 m	TPcm	151.83

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	159,588.92	13.544f	0.134p	9.803
Displacement	205,038.92	9.253f	0.003p	11.599

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	427.75	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	20.40	131.422a	7.400p	29.100
RISERS	47.39	138.554f	0.000	-2.570
Total Fixed	**47,197.66**	**4.551a**	**0.546s**	**18.103**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	68.74%	7,859.64	124.525f	16.972p	10.275	7,070.95
N1A C O T.S	68.74%	7,859.64	124.525f	16.971s	10.275	7,070.61
N1 C O T .C	89.70%	9,259.73	117.215f	0.000	12.346	14,526.29
N2 C O T .C	89.70%	27,776.41	79.115f	0.000	12.346	43,574.69
N3 C O T .C	17.52%	5,424.65	21.898f	0.003p	2.411	43,574.46
N4 C O T .C	76.30%	23,626.98	35.130a	0.000	10.502	43,574.69
N5 C O T .C	70.40%	19,794.01	89.345a	0.025s	10.183	42,315.11
N2A COT_SEP.P	34.70%	3,688.98	74.359f	18.302p	4.730	7,521.19
N2A COT_SEP.S	34.70%	3,688.98	74.359f	18.301s	4.730	7,521.20
N3 C O T.P	35.47%	3,770.95	45.803f	18.305p	4.832	7,520.54
N3 C O T.S	25.47%	2,707.81	45.797f	18.288s	3.483	7,520.55
N3A C O T.P	77.70%	8,260.57	17.251f	18.326p	10.526	7,520.55
N3A C O T.S	77.70%	8,260.57	17.251f	18.326s	10.526	7,520.55
N4 COT_SEP.P	60.00%	5,315.51	32.728a	18.321p	8.140	6,266.94
N4 COT_SEP.S	60.00%	5,315.51	32.728a	18.320s	8.140	6,266.95
N4A C O T.P	13.90%	982.46	54.159a	18.245p	1.921	4,999.89
N4A C O T.S	13.90%	982.46	54.159a	18.242s	1.921	4,999.89
N5 C O T.P	26.24%	3,856.14	82.798a	17.170p	4.351	9,152.92
N5 C O T.S	26.24%	3,856.14	82.799a	17.168s	4.351	9,151.92
SLOP TANK.P	50.00%	1,715.72	112.614a	15.690p	10.924	2,163.75
SLOP TANK.S	50.00%	1,715.70	112.614a	15.689s	10.924	2,163.06
Subtotals:		**155,718.58**	**15.487f**	**0.123p**	**9.500**	**291,996.63**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.143a	2.780p	0.786	175.84
DRAIN TK.C	50.00%	30.21	144.345a	0.000	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.564a	13.338p	8.255	128.72
SEWAGE.S	50.00%	132.51	123.564a	13.338s	8.255	128.64
Subtotals:		**343.06**	**126.729a**	**0.388p**	**6.673**	**501.10**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	100.00%	301.39	156.725a	9.274p	25.423	0.00
POTABLE W.S	100.00%	333.92	156.834a	8.760s	25.421	0.00
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**657.67**	**156.476a**	**0.602s**	**25.271**	**0.00**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	98.00%	99.98	122.682a	12.823p	22.434	18.67
DO SETTLING 1	98.00%	139.97	127.243a	12.823p	22.434	26.14
DO DAILY.P	98.00%	80.06	131.422a	12.823p	22.434	14.95
DO STORAGE.P	97.98%	517.29	141.431a	13.613p	23.178	87.37
DO STORAGE.S	98.00%	258.02	137.884a	12.540s	22.974	31.24
Subtotals:		**1,095.32**	**136.339a**	**7.221p**	**22.913**	**178.37**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.722a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.722a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	4468.1	6.8	13.8	10184
ACOMODATIONS	311.4	23.2	30.2	1877
ACOMOD AFT	171.7	19.0	26.1	893
HELIDECK	33.5	25.4	32.4	256
V-533603	15.3	15.5	22.6	31
V-533604A	15.3	15.5	22.6	31
MODULE M01,M02,M04 (base)	123.5	19.4	26.5	771
MODULE M01	179.3	22.0	29.1	472
MODULE M02	163.6	22.1	29.1	432
MODULE M04	251.1	24.2	31.3	1566
MODULE M03(base)	37.9	17.6	24.7	220
MODULE M03	250.7	28.0	35.1	797
VE SKID SUP.P	46.7	20.3	27.4	348
SKID FORE.P	71.0	17.9	24.9	482
CRANE CV77.S	107.9	21.7	28.7	843
CRANE CV69.P	107.3	21.5	28.6	834
CRANE CV109.P	105.3	21.9	29.0	829
TURRET	442.2	25.1	32.2	3870
LAYDOW AREA	38.1	16.8	23.9	215
CO2 ROOM.S	21.7	14.7	21.8	86
V-541202	26.4	16.9	24.0	57
Fender	55.6	15.1	22.1	81
Total	**7043.6**			**25177**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	25177.0s
80.000s	25177.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.12a	14.262	-0.120	0.000	16.260 (1)	
5.00s	0.12a	14.205	0.691	0.025	14.608 (1)	
10.00s	0.10a	14.024	1.523	0.121	12.887 (1)	
15.00s	0.07a	13.721	2.399	0.292	11.105 (1)	
20.00s	0.03a	13.298	3.352	0.542	9.279 (1)	
30.00s	0.09f	12.135	5.423	1.310	5.522 (1)	
40.00s	0.22f	10.711	6.188	2.346	1.537 (1)	
40.73s	0.23f	10.593	6.192	2.425	1.243 (1)	MaxRa
43.81s	0.27f	10.077	6.148	2.757	-0.001 (1)	FldPt
50.00s	0.34f	8.944	5.821	3.406	-2.491 (1)	
60.00s	0.45f	6.904	4.755	4.338	-6.454 (1)	
70.00s	0.53f	4.674	3.152	5.035	-10.250 (1)	
80.00s	0.59f	2.310	1.167	5.416	-13.774 (1)	

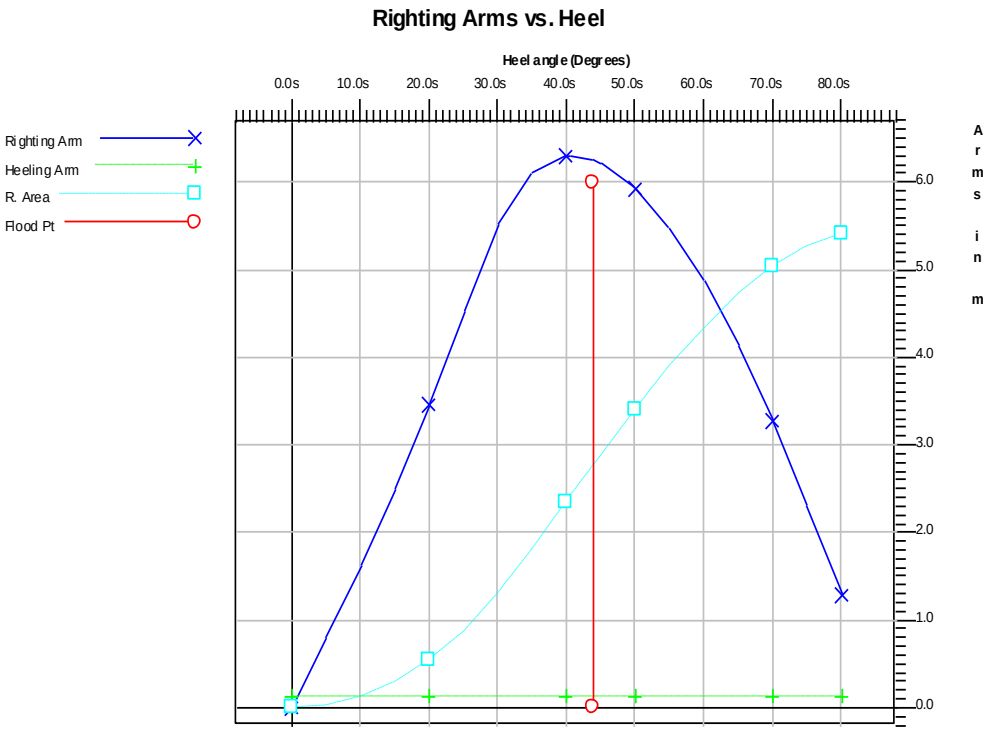
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	16.260

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	30.363	28.963	Yes



Longitudinal Strength At Sea Condition (0.02 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1821.51	12482	57.00	8.79
20	151.942a	1854.75	16682	47.58	9.63
24	148.902a	1881.63	22410	38.92	10.43
28	145.862a	1894.33	28134	32.82	10.97
32	142.822a	1914.06	33976	28.53	11.40
36	139.782a	1755.60	39602	22.96	11.66
40	136.742a	1438.10	44518	16.76	11.67
44	133.702a	1228.20	48528	12.90	11.47
48	130.662a	966.68	51916	9.25	11.17
52	127.622a	595.29	54334	5.23	10.73
56	124.582a	243.44	55603	1.97	10.15
60	121.542a	-134.67	55794	1.02	9.46
61	120.782a	-28.03	55738	0.21	9.29
62	116.022a	-499.58	53919	3.80	8.99
63	111.262a	-76.50	52128	0.60	8.69
64	106.502a	1053.14	54468	8.43	9.08
65	101.742a	1163.44	59802	9.23	9.97
66	96.982a	1208.65	65496	9.51	10.92
67	92.222a	1205.00	71283	9.39	11.88
68	87.462a	1162.98	76959	8.99	12.83
69	82.702a	1137.02	82415	8.71	13.74
70	77.942a	1090.54	87803	8.28	14.63
71	73.182a	987.15	92777	7.44	15.46
72	68.422a	878.60	97244	6.56	16.21
73	63.662a	768.32	101191	5.69	16.87
74	58.902a	232.73	103599	1.72	17.27
75	54.142a	-301.27	103462	2.23	17.24
76	49.382a	-833.67	100786	6.18	16.80
77	44.622a	-1318.78	95635	9.77	15.94
78	39.862a	-161.60	92191	1.20	15.37
79	35.102a	951.74	94097	7.05	15.68
80	30.342a	2151.28	101455	15.94	16.91
81	25.582a	3378.67	114644	25.03	19.11
82	20.822a	4602.40	133667	34.09	22.28
83	16.062a	3700.35	153455	27.41	25.58
84	11.302a	2796.00	168943	20.71	28.16
85	6.542a	1889.37	180121	14.00	30.02
86	1.782a	-526.98	183389	3.90	30.56
87	2.978f	-2935.41	175173	21.74	29.20
88	7.738f	-2581.47	162067	19.12	27.01
89	12.498f	-2223.29	150656	16.47	25.11
90	17.258f	-1860.86	140961	13.78	23.49
91	22.018f	-1494.17	133000	11.07	22.17
92	26.778f	-1119.34	126796	8.29	21.13
93	31.538f	-733.75	122413	5.44	20.40
94	36.298f	-2019.87	115888	14.96	19.31
95	41.058f	-3311.99	103227	24.53	17.20
96	45.818f	-4610.11	84401	34.15	14.07
97	50.578f	-5957.06	59328	44.13	9.89
98	55.338f	-5469.32	32158	40.51	5.36
99	60.098f	-4979.99	7315	36.89	1.22

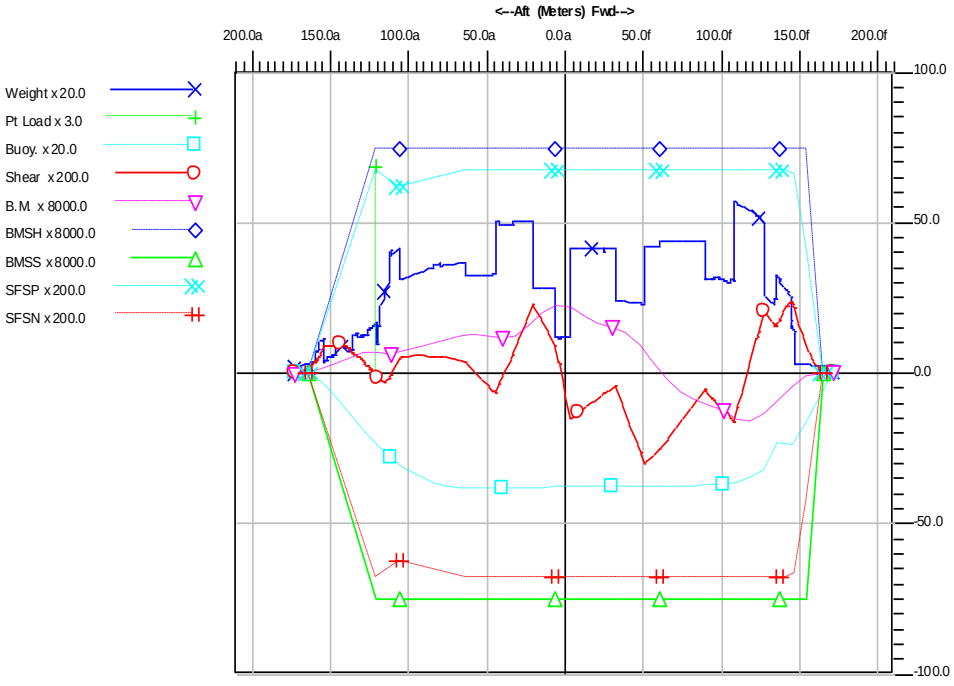
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	-4330.86	-14819	32.08	2.47
101	69.618f	-3680.13	-33860	27.26	5.64
102	74.378f	-3027.81	-49799	22.43	8.30
103	79.138f	-2373.91	-62630	17.58	10.44
104	83.898f	-1718.36	-72344	12.73	12.06
105	88.658f	-1061.03	-78933	7.86	13.16
106	93.418f	-1619.71	-85290	12.00	14.22
107	98.178f	-2104.79	-94178	15.59	15.70
108	102.938f	-2630.86	-105374	19.49	17.56
109	107.698f	-3180.88	-119235	23.56	19.87
110	112.458f	-1255.01	-129704	9.30	21.62
111	117.218f	598.94	-131227	4.44	21.87
112	121.978f	2420.28	-124001	17.93	20.67
113	126.738f	4145.04	-108313	30.70	18.05
114	131.563f	3498.82	-89829	25.92	14.97
115	136.388f	3571.61	-73629	26.46	12.27
116	141.213f	4474.87	-54160	33.15	9.03
117	146.038f	4414.48	-31743	33.37	5.29
118	148.613f	3457.50	-21615	29.67	3.60
119	151.188f	2603.51	-13820	25.84	2.30
120	153.763f	1886.75	-8515	22.20	1.42

Longitudinal Strength At Sea Condition (0.02 deg.)

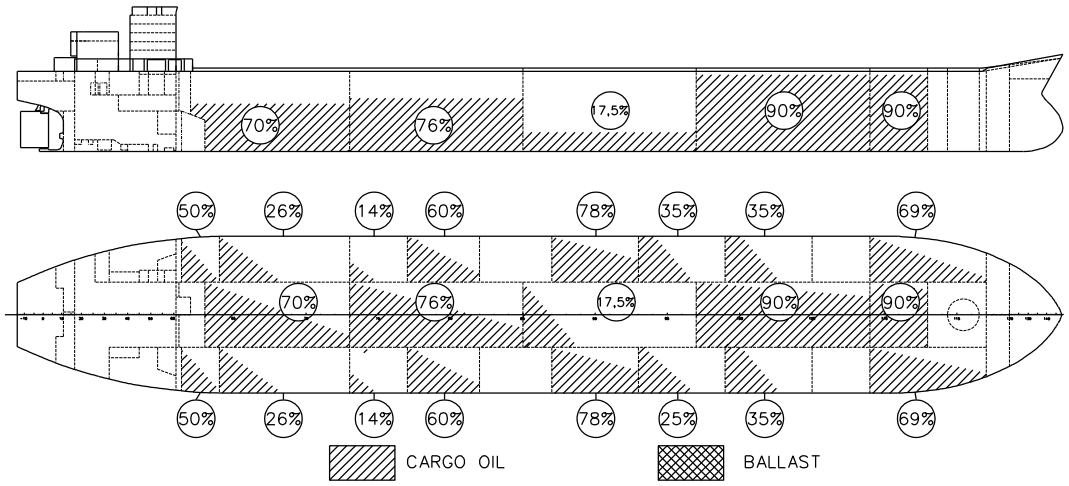
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1821.51	12482	57.00	8.79
61	120.782a	-28.03	55738	0.21	9.29
64	106.502a	1053.14	54468	8.43	9.08
73	63.662a	768.32	101191	5.69	16.87
77	44.622a	-1318.78	95635	9.77	15.94
82	20.822a	4602.40	133667	34.09	22.28
85	6.542a	1889.37	180121	14.00	30.02
87	2.978f	-2935.41	175173	21.74	29.20
93	31.538f	-733.75	122413	5.44	20.40
97	50.578f	-5957.06	59328	44.13	9.89
99	60.098f	-4979.99	7315	36.89	1.22
105	88.658f	-1061.03	-78933	7.86	13.16
109	107.698f	-3180.88	-119235	23.56	19.87
113	126.738f	4145.04	-108313	30.70	18.05
114*	133.525f	3234.21	-83224	23.96	13.87
115	136.388f	3571.61	-73629	26.46	12.27
116	141.213f	4474.87	-54160	33.15	9.03
116*	144.075f	4757.63	-40768	35.66	6.79
117	146.038f	4414.48	-31743	33.37	5.29
120	153.763f	1886.75	-8515	22.20	1.42

Max. Shear	-5957.07 MT	at	50.578f		44.13%Max
Max. Bending Moment	183389 MT-m	at	1.782a	(Hogging)	30.56%Max

Longitudinal Strength At Sea Condition



Condition no.19: 60% LOADING – 10% CONSUMABLES



Floating Status

Draft FP	14.170m	Heel	stbd 0.18 deg.	GM(Solid)	10.802m
Draft MS	14.147m	Equil	Yes	F/S Corr	1.449m
Draft AP	14.125m	Wind	0.0 kn	GM(Fluid)	9.353m
Trim	0.05/329.18	Wave	No	KMT	22.306 m
LCG	10.462f	VCG	11.503 m	TPcm	151.29

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	158,003.88	15.144f	0.088p	9.661
Displacement	203,453.89	10.462f	0.033s	11.503

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	425.74	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	20.40	131.422a	7.400p	29.100
RISERS	47.32	138.554f	0.000	-2.570
Total Fixed	**47,195.58**	**4.557a**	**0.546s**	**18.104**

Tank Status

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	68.74%	7,859.64	124.541f	16.967p	10.275	7,069.62
N1A C O T.S	68.74%	7,859.64	124.538f	16.973s	10.275	7,072.36
N1 C O T .C	89.70%	9,259.73	117.218f	0.005s	12.346	14,526.45
N2 C O T .C	89.70%	27,776.41	79.139f	0.005s	12.346	43,575.19
N3 C O T .C	17.50%	5,418.65	22.026f	0.025s	2.408	43,574.96
N4 C O T .C	76.30%	23,626.98	35.100a	0.006s	10.501	43,575.19
N5 C O T .C	70.40%	19,794.01	89.314a	0.032s	10.182	42,315.61
N2A COT_SEP.P	34.70%	3,688.98	74.376f	18.295p	4.730	7,521.26
N2A COT_SEP.S	34.70%	3,688.98	74.376f	18.308s	4.730	7,521.25
N3 C O T.P	35.47%	3,770.95	45.819f	18.298p	4.832	7,520.65
N3 C O T.S	25.47%	2,707.81	45.819f	18.298s	3.483	7,520.67
N3A C O T.P	77.70%	8,260.57	17.258f	18.323p	10.526	7,520.68
N3A C O T.S	77.70%	8,260.57	17.258f	18.329s	10.526	7,520.67
N4 COT_SEP.P	60.00%	5,315.51	32.722a	18.317p	8.140	6,267.02
N4 COT_SEP.S	60.00%	5,315.51	32.722a	18.324s	8.140	6,267.01
N4A C O T.P	13.90%	982.46	54.141a	18.228p	1.921	4,999.94
N4A C O T.S	13.90%	982.46	54.141a	18.259s	1.921	4,999.97
N5 C O T.P	26.24%	3,856.15	82.755a	17.164p	4.351	9,143.63
N5 C O T.S	26.24%	3,856.14	82.749a	17.178s	4.351	9,152.05
SLOP TANK.P	50.00%	1,715.72	112.611a	15.686p	10.924	2,160.28
SLOP TANK.S	50.00%	1,715.70	112.610a	15.693s	10.924	2,166.33
Subtotals:		**155,712.56**	**15.511f**	**0.116p**	**9.500**	**291,990.78**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.137a	2.768p	0.786	174.57
DRAIN TK.C	50.00%	30.21	144.342a	0.007s	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.562a	13.335p	8.254	128.35
SEWAGE.S	50.00%	132.51	123.561a	13.341s	8.254	129.05
Subtotals:		**343.06**	**126.727a**	**0.383p**	**6.673**	**499.88**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	7.23%	21.80	156.649a	8.562p	23.438	1,025.25
POTABLE W.S	6.53%	21.80	156.802a	8.389s	23.421	1,253.38
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**65.96**	**153.687a**	**3.965s**	**22.606**	**2,278.63**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	14.72%	15.01	122.682a	12.819p	19.269	18.67
DO SETTLING 1	10.51%	15.01	127.242a	12.817p	19.110	26.14
DO DAILY.P	98.00%	80.06	131.422a	12.822p	22.434	14.95
Subtotals:		**110.09**	**129.660a**	**12.821p**	**21.549**	**59.76**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.722a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.722a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	4468.1	6.8	13.8	10184
ACOMODATIONS	311.4	23.2	30.2	1877
ACOMOD AFT	171.7	19.0	26.1	893
HELIDECK	33.5	25.4	32.4	256
V-533603	15.3	15.5	22.6	31
V-533604A	15.3	15.5	22.6	31
MODULE M01,M02,M04 (base)	123.5	19.4	26.5	771
MODULE M01	179.3	22.0	29.1	472
MODULE M02	163.6	22.1	29.1	432
MODULE M04	251.1	24.2	31.3	1566
MODULE M03(base)	37.9	17.6	24.7	220
MODULE M03	250.7	28.0	35.1	797
VE SKID SUP.P	46.7	20.3	27.4	348
SKID FORE.P	71.0	17.9	24.9	482
CRANE CV77.S	107.9	21.7	28.7	843
CRANE CV69.P	107.3	21.5	28.6	834
CRANE CV109.P	105.3	21.9	29.0	829
TURRET	442.2	25.1	32.2	3870
LAYDOW AREA	38.1	16.8	23.9	215
CO2 ROOM.S	21.7	14.7	21.8	86
V-541202	26.4	16.9	24.0	57
Fender	55.6	15.1	22.1	81
Total	**7043.6**			**25177**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	25177.0s
80.000s	25177.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.01f	14.144	-0.152	0.000	16.665 (1)	
5.00s	0.01f	14.088	0.667	0.022	15.011 (1)	
10.00s	0.03f	13.909	1.509	0.117	13.284 (1)	
15.00s	0.05f	13.609	2.395	0.287	11.493 (1)	
20.00s	0.09f	13.189	3.358	0.538	9.655 (1)	
30.00s	0.20f	12.027	5.458	1.309	5.889 (1)	
40.00s	0.35f	10.586	6.244	2.353	1.947 (1)	
40.94s	0.36f	10.430	6.249	2.456	1.572 (1)	MaxRa
44.89s	0.41f	9.751	6.177	2.884	-0.001 (1)	FldPt
50.00s	0.48f	8.803	5.889	3.424	-2.040 (1)	
60.00s	0.60f	6.753	4.829	4.368	-5.967 (1)	
70.00s	0.69f	4.514	3.228	5.079	-9.734 (1)	
80.00s	0.76f	2.146	1.241	5.473	-13.242 (1)	

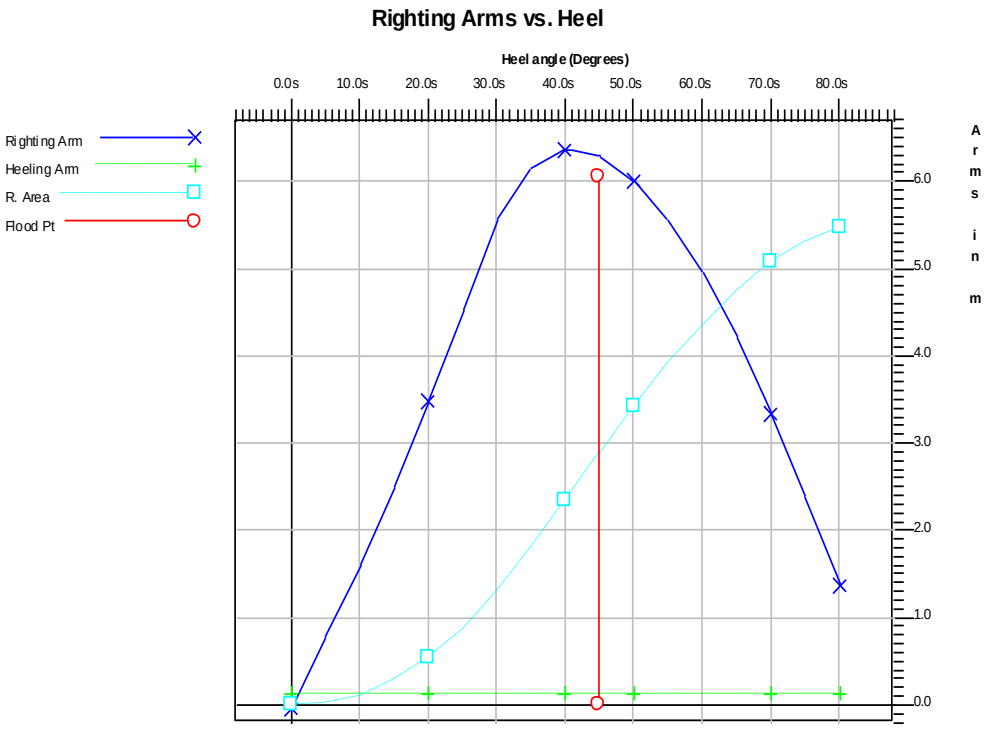
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	16.665

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	30.749	29.349	Yes



Longitudinal Strength At Sea Condition (stbd 0.18 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1254.83	10926	39.27	7.69
20	151.942a	1301.29	13835	33.38	7.99
24	148.902a	1349.65	17892	27.91	8.33
28	145.862a	1307.91	21958	22.66	8.56
32	142.822a	1180.44	25779	17.60	8.65
36	139.782a	895.43	28962	11.71	8.52
40	136.742a	454.90	31056	5.30	8.14
44	133.702a	118.38	31793	1.24	7.52
48	130.662a	-133.99	31847	1.28	6.85
52	127.622a	-514.18	30907	4.51	6.10
56	124.582a	-890.64	28745	7.22	5.25
60	121.542a	-1288.08	25440	9.71	4.31
61	120.782a	-1185.99	24501	8.79	4.08
62	116.022a	-1582.26	17320	12.02	2.89
63	111.262a	-1082.53	10525	8.44	1.75
64	106.502a	127.29	8237	1.02	1.37
65	101.742a	313.59	9313	2.49	1.55
66	96.982a	436.13	11115	3.43	1.85
67	92.222a	510.68	13381	3.98	2.23
68	87.462a	547.34	15909	4.23	2.65
69	82.702a	600.34	18592	4.60	3.10
70	77.942a	632.88	21584	4.81	3.60
71	73.182a	608.35	24537	4.58	4.09
72	68.422a	578.42	27359	4.32	4.56
73	63.662a	546.46	30033	4.05	5.01
74	58.902a	68.19	31491	0.51	5.25
75	54.142a	-408.79	30676	3.03	5.11
76	49.382a	-884.48	27594	6.55	4.60
77	44.622a	-1313.18	22305	9.73	3.72
78	39.862a	-106.26	18976	0.79	3.16
79	35.102a	1056.52	21233	7.83	3.54
80	30.342a	2305.20	29177	17.08	4.86
81	25.582a	3581.43	43185	26.53	7.20
82	20.822a	4853.70	63258	35.95	10.54
83	16.062a	3995.63	84318	29.60	14.05
84	11.302a	3133.56	101283	23.21	16.88
85	6.542a	2267.48	114135	16.80	19.02
86	1.782a	-122.69	119236	0.91	19.87
87	2.978f	-2506.65	112972	18.57	18.83
88	7.738f	-2133.50	101923	15.80	16.99
89	12.498f	-1756.40	92660	13.01	15.44
90	17.258f	-1375.35	85201	10.19	14.20
91	22.018f	-990.36	79565	7.34	13.26
92	26.778f	-597.51	75772	4.43	12.63
93	31.538f	-194.20	73885	1.44	12.31
94	36.298f	-1471.41	69919	10.90	11.65
95	41.058f	-2754.92	59859	20.41	9.98
96	45.818f	-4044.73	43675	29.96	7.28
97	50.578f	-5383.68	21282	39.88	3.55
98	55.338f	-4899.86	-3197	36.30	0.53
99	60.098f	-4414.76	-25370	32.70	4.23

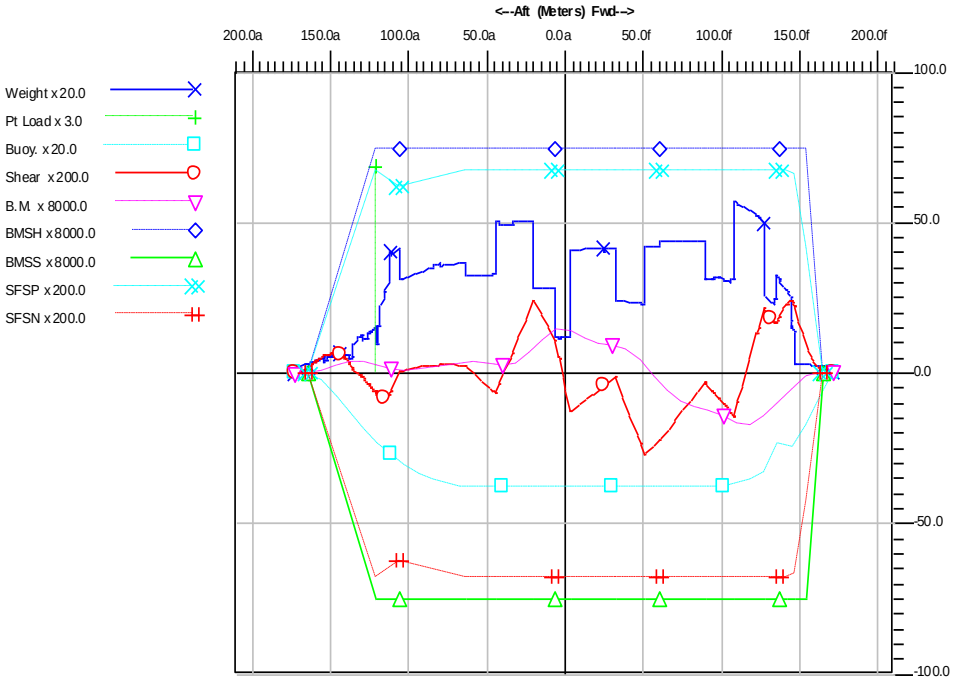
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	-3778.66	-44875	27.99	7.48
101	69.618f	-3141.27	-61349	23.27	10.22
102	74.378f	-2502.58	-74786	18.54	12.46
103	79.138f	-1862.60	-85179	13.80	14.20
104	83.898f	-1221.28	-92523	9.05	15.42
105	88.658f	-578.48	-96811	4.29	16.14
106	93.418f	-1156.96	-100948	8.57	16.82
107	98.178f	-1663.54	-107714	12.32	17.95
108	102.938f	-2212.85	-116893	16.39	19.48
109	107.698f	-2787.77	-128854	20.65	21.48
110	112.458f	-900.85	-137575	6.67	22.93
111	117.218f	914.30	-137534	6.77	22.92
112	121.978f	2697.18	-128929	19.98	21.49
113	126.738f	4384.09	-112044	32.47	18.67
114	131.563f	3697.98	-92533	27.39	15.42
115	136.388f	3734.08	-75495	27.66	12.58
116	141.213f	4608.09	-55344	34.13	9.22
117	146.038f	4515.57	-32389	34.13	5.40
118	148.613f	3539.11	-22042	30.37	3.67
119	151.188f	2667.06	-14077	26.47	2.35
120	153.763f	1934.47	-8656	22.76	1.44

Longitudinal Strength At Sea Condition (stbd 0.18 deg.)

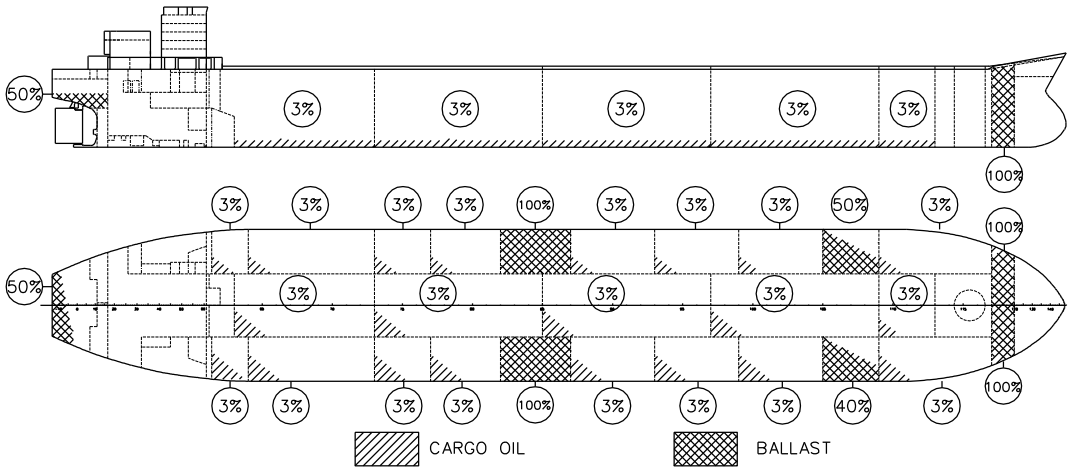
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	1254.83	10926	39.27	7.69
61	120.782a	-1185.99	24501	8.79	4.08
64	106.502a	127.29	8237	1.02	1.37
73	63.662a	546.46	30033	4.05	5.01
77	44.622a	-1313.18	22305	9.73	3.72
82	20.822a	4853.70	63258	35.95	10.54
85	6.542a	2267.48	114135	16.80	19.02
87	2.978f	-2506.65	112972	18.57	18.83
93	31.538f	-194.20	73885	1.44	12.31
97	50.578f	-5383.68	21282	39.88	3.55
99	60.098f	-4414.76	-25370	32.70	4.23
105	88.658f	-578.48	-96811	4.29	16.14
109	107.698f	-2787.77	-128854	20.65	21.48
113	126.738f	4384.09	-112044	32.47	18.67
114*	133.525f	3417.23	-85565	25.31	14.26
115	136.388f	3734.08	-75495	27.66	12.58
116	141.213f	4608.09	-55344	34.13	9.22
116*	144.075f	4872.94	-41614	36.53	6.94
117	146.038f	4515.57	-32389	34.13	5.40
120	153.763f	1934.47	-8656	22.76	1.44

Max. Shear	-5383.69 MT	at	50.578f		39.88%Max
Max. Bending Moment	-137575 MT-m	at	112.458f	(Sagging)	22.93%Max

Longitudinal Strength At Sea Condition



Condition no.20: NORMAL BALLAST – 100% CONSUMABLES



Floating Status

Draft FP	6.108m	Heel	stbd 0.15 deg.	GM(Solid)	20.465m
Draft MS	6.690m	Equil	Yes	F/S Corr	3.209m
Draft AP	7.272m	Wind	0.0 kn	GM(Fluid)	17.257m
Trim	aft 1.16/329.18	Wave	No	KMT	34.799 m
LCG	8.334f	VCG	14.332 m	TPcm	145.83

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	46,717.66	22.098f	0.341p	10.855
Displacement	92,167.66	8.334f	0.052s	14.332

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	487.94	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	20.40	131.422a	7.400p	29.100
RISERS	49.49	138.554f	0.000	-2.570
Total Fixed	**47,259.94**	**4.362a**	**0.546s**	**18.076**

Tank Status

WATER BALLAST (SpGr 1.025)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
W BALLAST 1.P	100.00%	2,991.69	149.515f	7.847p	14.232	0.00
W BALLAST 1.S	100.00%	2,991.69	149.515f	7.847s	14.232	0.00
N2 W BALLAST.P	50.00%	3,926.15	98.125f	18.229p	6.888	5,576.60
N2 W BALLAST.S	40.00%	3,141.00	98.114f	18.211s	5.542	5,570.86
N3B BALLAST.P	100.00%	9,870.29	8.922a	18.280p	13.534	0.00
N3B BALLAST.S	100.00%	9,870.29	8.922a	18.280s	13.534	0.00
AFTER PEAK	50.00%	1,163.33	161.034a	0.024s	17.911	11,070.48
Subtotals:		**33,954.43**	**36.065f**	**0.422p**	**12.299**	**22,217.95**

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	3.00%	345.82	120.931f	15.454p	0.738	3,407.35
N1A C O T.S	3.00%	345.76	120.869f	15.504s	0.738	3,441.05
N1 C O T .C	3.00%	309.69	117.089f	0.119s	0.413	14,526.48
N2 C O T .C	3.00%	928.98	77.974f	0.119s	0.415	43,575.28
N3 C O T .C	3.00%	1,042.84	20.862f	0.118s	0.418	48,548.28
N4 C O T .C	3.00%	928.98	36.266a	0.119s	0.415	43,575.29
N5 C O T .C	3.00%	939.89	88.738a	0.111s	0.446	41,001.45
N2A COT_SEP.P	3.00%	322.50	74.072f	17.881p	0.440	7,013.78
N2A COT_SEP.S	3.00%	322.17	74.070f	17.992s	0.439	7,048.89
N3 C O T.P	3.00%	321.89	45.530f	17.892p	0.438	7,042.00
N3 C O T.S	3.00%	321.59	45.529f	18.003s	0.438	7,075.87
N3A C O T.P	3.00%	321.90	16.970f	17.892p	0.438	7,041.97
N3A C O T.S	3.00%	321.59	16.969f	18.003s	0.438	7,075.86
N4 COT_SEP.P	3.00%	268.23	32.922a	17.892p	0.438	5,868.11
N4 COT_SEP.S	3.00%	267.98	32.923a	18.003s	0.438	5,896.35
N4A C O T.P	3.00%	214.00	54.270a	17.892p	0.438	4,681.68
N4A C O T.S	3.00%	213.80	54.270a	18.003s	0.438	4,704.22
N5 C O T.P	3.00%	443.10	80.994a	16.082p	0.627	5,479.12
N5 C O T.S	3.00%	443.06	80.917a	16.145s	0.627	5,516.13
SLOP TANK.P	3.00%	103.43	111.391a	12.722p	2.231	152.90
SLOP TANK.S	3.00%	103.42	111.386a	12.729s	2.230	154.25
Subtotals:		**8,830.62**	**5.581f**	**0.075s**	**0.515**	**272,826.28**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.149a	2.769p	0.786	174.48
DRAIN TK.C	50.00%	30.21	144.347a	0.006s	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.565a	13.335p	8.255	128.38
SEWAGE.S	50.00%	132.51	123.565a	13.340s	8.255	128.96
Subtotals:		**343.06**	**126.731a**	**0.384p**	**6.673**	**499.73**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	100.00%	301.39	156.725a	9.274p	25.423	0.00
POTABLE W.S	100.00%	333.92	156.834a	8.760s	25.421	0.00
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**657.67**	**156.475a**	**0.602s**	**25.271**	**0.00**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	98.00%	99.98	122.683a	12.822p	22.434	18.67
DO SETTLING 1	98.00%	139.97	127.243a	12.822p	22.434	26.14
DO DAILY.P	98.00%	80.06	131.422a	12.822p	22.434	14.95
DO STORAGE.P	98.00%	517.28	141.433a	13.612p	23.178	89.13
DO STORAGE.S	98.00%	258.02	137.885a	12.540s	22.974	31.25
Subtotals:		**1,095.31**	**136.340a**	**7.221p**	**22.912**	**180.14**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.722a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.722a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	6943.4	10.6	13.9	15888
ACOMODATIONS	311.4	30.8	34.0	2306
ACOMOD AFT	171.7	26.6	29.9	1023
HELIDECK	33.5	33.0	36.2	312
V-533603	15.3	23.1	26.4	37
V-533604A	15.3	23.1	26.4	37
MODULE M01,M02,M04 (base)	123.5	27.0	30.3	882
MODULE M01	179.3	29.6	32.9	534
MODULE M02	163.6	29.7	33.0	489
MODULE M04	251.1	31.8	35.1	1917
MODULE M03(base)	37.9	25.2	28.5	254
MODULE M03	250.7	35.6	38.9	964
VE SKID SUP.P	46.7	27.9	31.2	396
SKID FORE.P	71.0	25.5	28.8	555
CRANE CV77.S	107.9	29.3	32.6	955
CRANE CV69.P	107.3	29.1	32.4	946
CRANE CV109.P	105.3	29.5	32.8	939
TURRET	442.2	32.7	36.0	4723
LAYDOW AREA	38.1	24.4	27.7	249
CO2 ROOM.S	21.7	22.3	25.6	111
V-541202	26.4	24.5	27.8	66
Fender	55.6	22.7	26.0	105
Total	**9518.9**			**33689**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	33689.0s
80.000s	33689.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.20a	6.689	-0.410	0.000	23.654 (1)	
5.00s	0.20a	6.660	1.102	0.030	21.970 (1)	
10.00s	0.19a	6.549	2.744	0.197	20.164 (1)	
15.00s	0.17a	6.354	4.460	0.511	18.241 (1)	
20.00s	0.17a	5.936	5.693	0.957	16.326 (1)	
30.00s	0.19a	4.304	6.677	2.059	12.752 (1)	
35.08s	0.20a	3.162	6.768	2.656	11.024 (1)	MaxRa
40.00s	0.21a	1.872	6.715	3.236	9.427 (1)	
50.00s	0.22a	-1.143	6.264	4.378	6.351 (1)	
60.00s	0.20a	-4.299	4.943	5.368	3.308 (1)	
70.00s	0.16a	-7.386	2.988	6.067	0.274 (1)	
70.92s	0.15a	-7.662	2.787	6.113	0.000 (1)	FldPt
80.00s	0.10a	-10.310	0.683	6.391	-2.693 (1)	

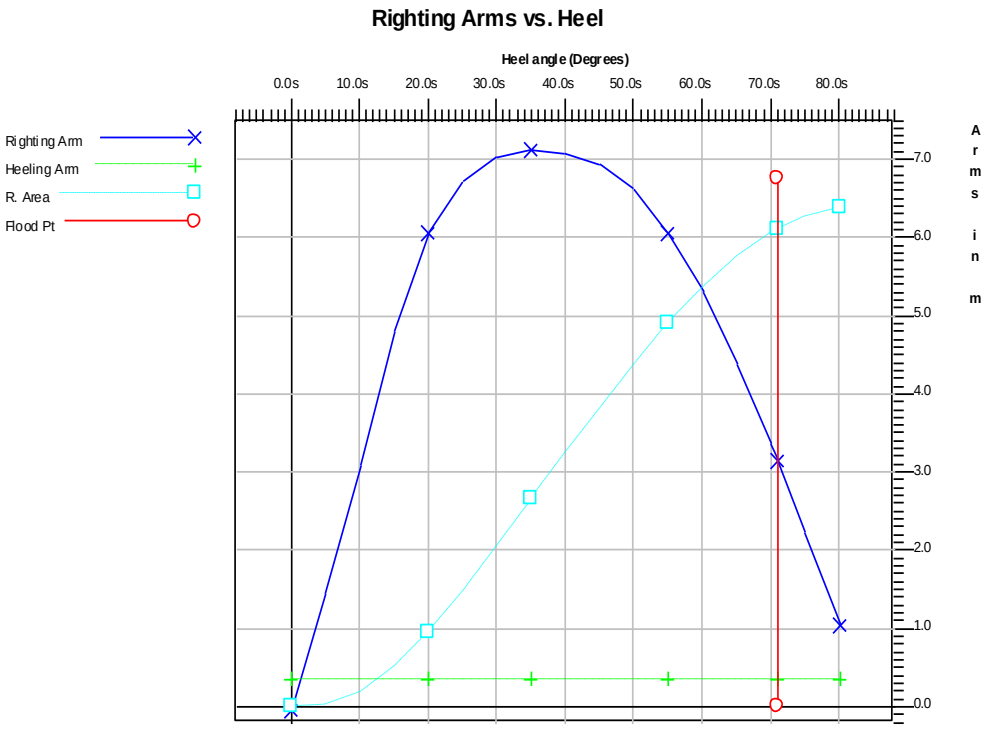
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	23.654

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	14.511	13.111	Yes



Longitudinal Strength At Sea Condition (stbd 0.15 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	3108.99	20765	97.29	14.62
20	151.942a	3261.77	28041	83.68	16.19
24	148.902a	3512.39	38382	72.65	17.86
28	145.862a	3822.82	49513	66.23	19.30
32	142.822a	4213.49	61778	62.81	20.72
36	139.782a	4497.07	75063	58.82	22.09
40	136.742a	4690.06	89086	54.65	23.36
44	133.702a	5056.34	103856	53.12	24.55
48	130.662a	5434.39	119853	51.98	25.79
52	127.622a	5762.75	136917	50.58	27.04
56	124.582a	6169.58	155048	50.04	28.30
60	121.542a	6604.78	174492	49.79	29.60
61	120.782a	6922.77	179642	51.28	29.94
62	116.022a	6722.00	212178	51.07	35.36
63	111.262a	6483.52	243646	50.55	40.61
64	106.502a	6146.12	273767	49.21	45.63
65	101.742a	5646.54	301920	44.81	50.32
66	96.982a	5067.37	327497	39.86	54.58
67	92.222a	4421.06	350153	34.47	58.36
68	87.462a	3713.82	369588	28.70	61.60
69	82.702a	2999.01	385578	22.98	64.26
70	77.942a	2240.73	398168	17.02	66.36
71	73.182a	1401.22	406898	10.55	67.82
72	68.422a	533.96	411553	3.99	68.59
73	63.662a	-348.95	412055	2.58	68.68
74	58.902a	-1263.14	408267	9.36	68.04
75	54.142a	-2175.50	400132	16.11	66.69
76	49.382a	-3086.03	387658	22.86	64.61
77	44.622a	-3949.06	370909	29.25	61.82
78	39.862a	-4800.47	350188	35.56	58.36
79	35.102a	-5695.49	325256	42.19	54.21
80	30.342a	-6504.08	296217	48.18	49.37
81	25.582a	-7284.58	263451	53.96	43.91
82	20.822a	-8068.38	226961	59.77	37.83
83	16.062a	-5008.31	195889	37.10	32.65
84	11.302a	-1949.46	179379	14.44	29.90
85	6.542a	1108.16	177427	8.21	29.57
86	1.782a	4191.96	190089	31.05	31.68
87	2.978f	7284.46	217450	53.96	36.24
88	7.738f	6548.08	250419	48.50	41.74
89	12.498f	5816.00	279893	43.08	46.65
90	17.258f	5088.22	305893	37.69	50.98
91	22.018f	4364.74	328439	32.33	54.74
92	26.778f	3649.46	347547	27.03	57.92
93	31.538f	2945.01	363297	21.81	60.55
94	36.298f	2247.61	375707	16.65	62.62
95	41.058f	1544.27	384784	11.44	64.13
96	45.818f	834.98	390498	6.19	65.08
97	50.578f	76.87	392768	0.57	65.46
98	55.338f	-709.88	391310	5.26	65.22
99	60.098f	-1494.81	386112	11.07	64.35

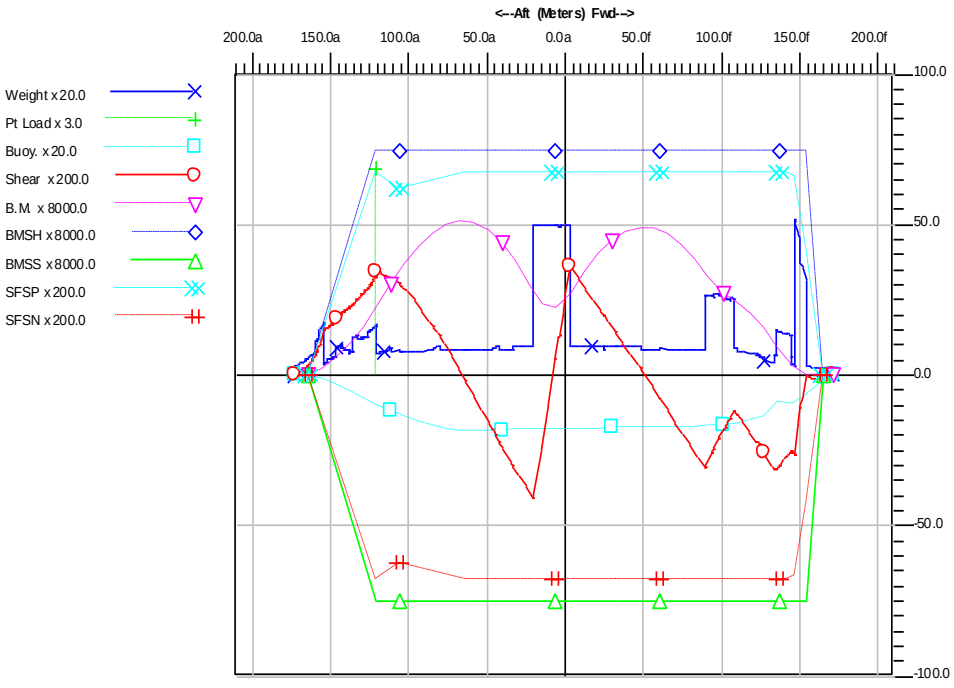
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
100	64.858f	-2264.54	377213	16.77	62.87
101	69.618f	-3032.44	364655	22.46	60.78
102	74.378f	-3798.53	348446	28.14	58.07
103	79.138f	-4562.79	328595	33.80	54.77
104	83.898f	-5324.99	305110	39.44	50.85
105	88.658f	-6084.28	278004	45.07	46.33
106	93.418f	-5148.26	251319	38.14	41.89
107	98.178f	-4146.96	229200	30.72	38.20
108	102.938f	-3199.21	211820	23.70	35.30
109	107.698f	-2306.09	198730	17.08	33.12
110	112.458f	-2980.49	186247	22.08	31.04
111	117.218f	-3690.93	170414	27.34	28.40
112	121.978f	-4387.09	151232	32.50	25.21
113	126.738f	-5118.96	128665	37.92	21.44
114	131.563f	-5901.69	102105	43.72	17.02
115	136.388f	-5974.24	72737	44.25	12.12
116	141.213f	-5331.24	45494	39.49	7.58
117	146.038f	-5277.54	20644	39.89	3.44
118	148.613f	-3153.11	9845	27.06	1.64
119	151.188f	-1379.13	4202	13.69	0.70
120	153.763f	33.93	2533	0.40	0.42

Longitudinal Strength At Sea Condition (stbd 0.15 deg.)

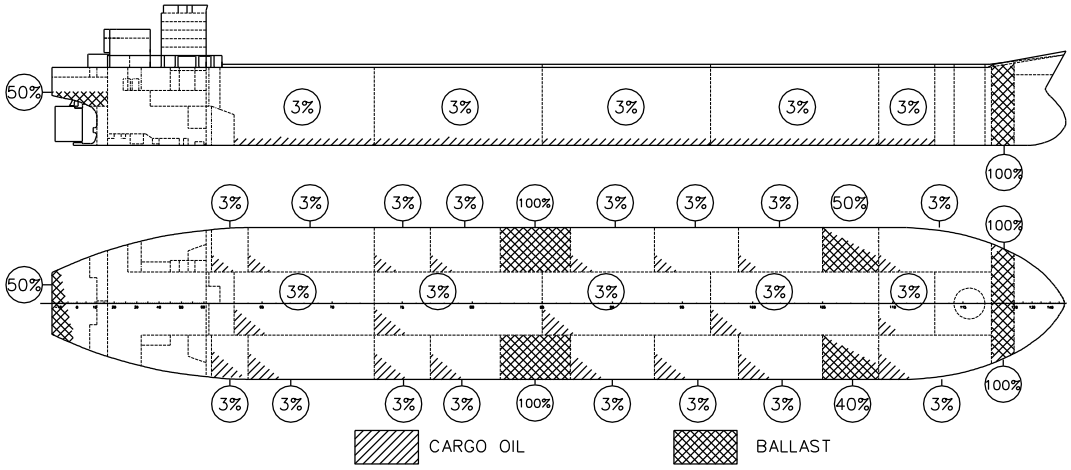
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	3108.99	20765	97.29	14.62
61	120.782a	6922.77	179642	51.28	29.94
64	106.502a	6146.12	273767	49.21	45.63
73	63.662a	-348.95	412055	2.58	68.68
77	44.622a	-3949.06	370909	29.25	61.82
82	20.822a	-8068.38	226961	59.77	37.83
85	6.542a	1108.16	177427	8.21	29.57
87	2.978f	7284.46	217450	53.96	36.24
93	31.538f	2945.01	363297	21.81	60.55
97	50.578f	76.87	392768	0.57	65.46
99	60.098f	-1494.81	386112	11.07	64.35
105	88.658f	-6084.28	278004	45.07	46.33
109	107.698f	-2306.09	198730	17.08	33.12
113	126.738f	-5118.96	128665	37.92	21.44
114*	133.525f	-6190.84	90248	45.86	15.04
115	136.388f	-5974.24	72737	44.25	12.12
116	141.213f	-5331.24	45494	39.49	7.58
116*	144.075f	-5060.77	30768	37.94	5.13
117	146.038f	-5277.54	20644	39.89	3.44
120	153.763f	33.93	2533	0.40	0.42

Max. Shear	-8068.45 MT	at	20.822a		59.77%Max
Max. Bending Moment	412055 MT-m	at	63.662a	(Hogging)	68.68%Max

Longitudinal Strength At Sea Condition



Condition no.21: NORMAL BALLAST – 10% CONSUMABLES



Floating Status

Draft FP	6.402m	Heel	stbd 0.37 deg.	GM(Solid)	21.039m
Draft MS	6.552m	Equil	Yes	F/S Corr	3.290m
Draft AP	6.702m	Wind	0.0 kn	GM(Fluid)	17.749m
Trim	aft 0.30/329.18	Wave	No	KMT	35.203 m
LCG	11.064f	VCG	14.163 m	TPcm	145.58

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	45,112.50	28.067f	0.183p	10.390
Displacement	90,562.51	11.064f	0.137s	14.163

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
MOORING	485.66	138.554f	0.000	-2.570
PLANT LIQUIDS	1,046.01	10.784f	4.942s	34.000
PROVISIONS	2.40	131.422a	7.400p	29.100
RISERS	49.41	138.554f	0.000	-2.570
Total Fixed	**47,239.58**	**4.321a**	**0.549s**	**18.073**

Tank Status

WATER BALLAST (SpGr 1.025)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
W BALLAST 1.P	100.00%	2,991.69	149.515f	7.847p	14.232	0.00
W BALLAST 1.S	100.00%	2,991.69	149.515f	7.847s	14.232	0.00
N2 W BALLAST.P	50.00%	3,926.15	98.131f	18.224p	6.888	5,576.85
N2 W BALLAST.S	40.00%	3,141.00	98.121f	18.218s	5.542	5,571.27
N3B BALLAST.P	100.00%	9,870.29	8.922a	18.280p	13.534	0.00
N3B BALLAST.S	100.00%	9,870.29	8.922a	18.280s	13.534	0.00
AFTER PEAK	50.01%	1,163.33	161.014a	0.062s	17.912	11,079.93
Subtotals:		**33,954.42**	**36.067f**	**0.420p**	**12.299**	**22,228.05**

CARGO (SpGr 0.920)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N1A C O T.P	3.00%	345.80	121.201f	15.384p	0.739	3,371.04
N1A C O T.S	3.00%	345.65	121.039f	15.512s	0.738	3,457.40
N1 C O T .C	3.00%	309.69	117.185f	0.306s	0.414	14,527.18
N2 C O T .C	3.00%	928.98	78.838f	0.306s	0.414	43,577.38
N3 C O T .C	3.00%	1,035.10	21.718f	0.306s	0.414	48,550.62
N4 C O T .C	3.00%	928.98	35.402a	0.306s	0.414	43,577.39
N5 C O T .C	3.00%	939.89	88.156a	0.285s	0.445	41,020.79
N2A COT_SEP.P	3.00%	322.75	74.285f	17.795p	0.440	6,987.63
N2A COT_SEP.S	3.00%	321.91	74.283f	18.079s	0.439	7,077.15
N3 C O T.P	3.00%	322.15	45.744f	17.805p	0.438	7,015.97
N3 C O T.S	3.00%	321.35	45.743f	18.091s	0.437	7,103.01
N3A C O T.P	3.00%	322.15	17.184f	17.805p	0.438	7,016.02
N3A C O T.S	3.00%	321.35	17.183f	18.091s	0.437	7,103.01
N4 COT_SEP.P	3.00%	268.45	32.774a	17.805p	0.438	5,846.44
N4 COT_SEP.S	3.00%	267.78	32.774a	18.091s	0.437	5,919.02
N4A C O T.P	3.00%	214.17	54.175a	17.805p	0.438	4,664.43
N4A C O T.S	3.00%	213.64	54.175a	18.091s	0.437	4,722.30
N5 C O T.P	3.00%	443.18	80.733a	16.072p	0.627	5,462.62
N5 C O T.S	3.00%	443.06	80.536a	16.234s	0.626	5,558.32
SLOP TANK.P	3.00%	103.44	111.378a	12.718p	2.230	152.20
SLOP TANK.S	3.00%	103.42	111.363a	12.737s	2.230	155.70
Subtotals:		**8,822.89**	**6.023f**	**0.194s**	**0.515**	**272,865.63**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.142a	2.755p	0.786	173.03
DRAIN TK.C	50.00%	30.21	144.343a	0.015s	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.564a	13.332p	8.255	127.96
SEWAGE.S	50.00%	132.51	123.562a	13.344s	8.254	129.44
Subtotals:		**343.06**	**126.728a**	**0.378p**	**6.673**	**498.34**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	7.19%	21.68	156.642a	8.402p	23.438	1,021.56
POTABLE W.S	6.53%	21.80	156.827a	8.594s	23.422	1,257.89
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**65.84**	**153.687a**	**4.108s**	**22.605**	**2,279.44**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	14.72%	15.01	122.683a	12.814p	19.269	18.67
DO SETTLING 1	10.51%	15.01	127.245a	12.811p	19.110	26.14
DO DAILY.P	98.00%	80.06	131.422a	12.821p	22.434	14.95
Subtotals:		**110.09**	**129.661a**	**12.819p**	**21.549**	**59.76**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.722a	12.281s	20.954	4.45
Subtotals:		**26.63**	**144.722a**	**12.281s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	6943.4	10.6	13.9	15888
ACOMODATIONS	311.4	30.8	34.0	2306
ACOMOD AFT	171.7	26.6	29.9	1023
HELIDECK	33.5	33.0	36.2	312
V-533603	15.3	23.1	26.4	37
V-533604A	15.3	23.1	26.4	37
MODULE M01,M02,M04 (base)	123.5	27.0	30.3	882
MODULE M01	179.3	29.6	32.9	534
MODULE M02	163.6	29.7	33.0	489
MODULE M04	251.1	31.8	35.1	1917
MODULE M03(base)	37.9	25.2	28.5	254
MODULE M03	250.7	35.6	38.9	964
VE SKID SUP.P	46.7	27.9	31.2	396
SKID FORE.P	71.0	25.5	28.8	555
CRANE CV77.S	107.9	29.3	32.6	955
CRANE CV69.P	107.3	29.1	32.4	946
CRANE CV109.P	105.3	29.5	32.8	939
TURRET	442.2	32.7	36.0	4723
LAYDOW AREA	38.1	24.4	27.7	249
CO2 ROOM.S	21.7	22.3	25.6	111
V-541202	26.4	24.5	27.8	66
Fender	55.6	22.7	26.0	105
Total	**9518.9**			**33689**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	33689.0s
80.000s	33689.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.05a	6.551	-0.489	0.000	24.125 (1)	
5.00s	0.05a	6.523	1.067	0.025	22.440 (1)	
10.00s	0.04a	6.413	2.758	0.191	20.631 (1)	
15.00s	0.02a	6.218	4.516	0.508	18.709 (1)	
20.00s	0.01a	5.791	5.752	0.960	16.818 (1)	
30.00s	0.02a	4.147	6.737	2.072	13.284 (1)	
40.00s	0.03a	1.714	6.770	3.260	9.977 (1)	
50.00s	0.03a	-1.314	6.330	4.411	6.935 (1)	
60.00s	0.01f	-4.491	5.030	5.415	3.967 (1)	
70.00s	0.07f	-7.599	3.089	6.130	0.990 (1)	
73.34s	0.09f	-8.598	2.355	6.289	-0.004 (1)	FldPt
80.00s	0.13f	-10.524	0.791	6.473	-1.953 (1)	

Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

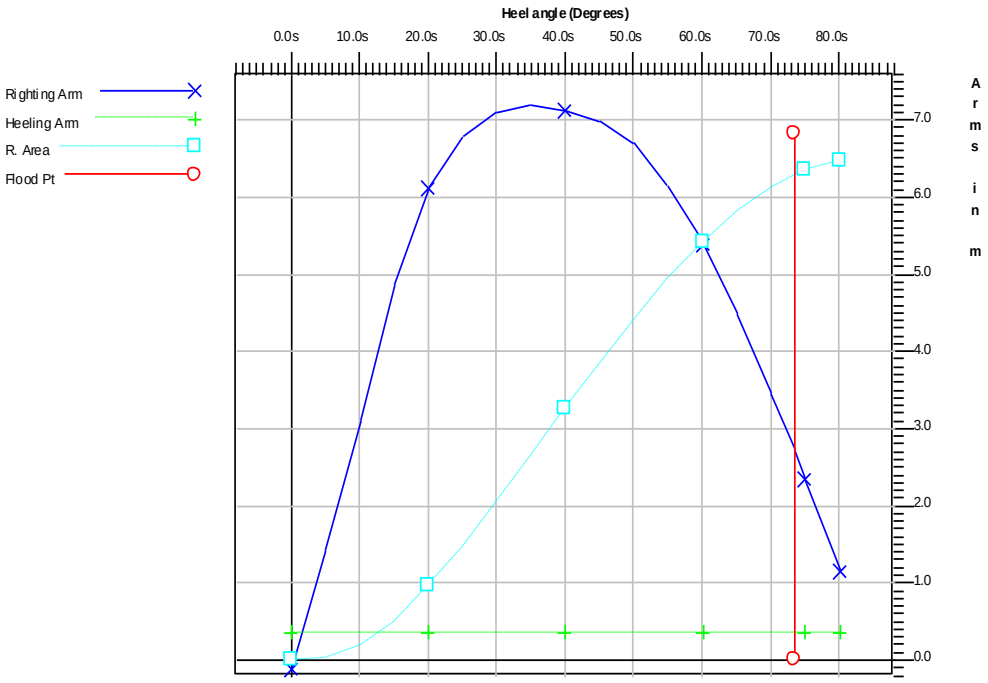
Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	24.125

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	14.206	12.806	Yes

Righting Arms vs. Heel



Longitudinal Strength At Sea Condition (stbd 0.37 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	2521.13	19076	78.90	13.43
20	151.942a	2679.79	25000	68.75	14.43
24	148.902a	2942.11	33565	60.85	15.62
28	145.862a	3188.44	42902	55.24	16.72
32	142.822a	3422.47	52981	51.02	17.77
36	139.782a	3570.39	63630	46.70	18.73
40	136.742a	3631.78	74611	42.32	19.56
44	133.702a	3865.19	86025	40.61	20.33
48	130.662a	4233.07	98231	40.49	21.14
52	127.622a	4540.18	111607	39.85	22.04
56	124.582a	4915.13	125947	39.87	22.98
60	121.542a	5326.49	141516	40.15	24.00
61	120.782a	5639.01	145687	41.77	24.28
62	116.022a	5512.37	172250	41.88	28.71
63	111.262a	5351.20	198108	41.72	33.02
64	106.502a	5091.17	222984	40.76	37.16
65	101.742a	4670.15	246263	37.06	41.04
66	96.982a	4172.58	267349	32.82	44.56
67	92.222a	3610.38	285908	28.15	47.65
68	87.462a	2989.32	301651	23.10	50.28
69	82.702a	2362.27	314364	18.10	52.39
70	77.942a	1692.88	324097	12.86	54.02
71	73.182a	942.99	330395	7.10	55.07
72	68.422a	165.66	333047	1.24	55.51
73	63.662a	-627.33	331972	4.65	55.33
74	58.902a	-1474.66	326981	10.92	54.50
75	54.142a	-2320.54	317960	17.19	52.99
76	49.382a	-3164.98	304917	23.44	50.82
77	44.622a	-3962.31	287911	29.35	47.99
78	39.862a	-4755.62	267228	35.23	44.54
79	35.102a	-5592.93	242611	41.43	40.44
80	30.342a	-6344.19	214159	46.99	35.69
81	25.582a	-7067.74	182252	52.35	30.38
82	20.822a	-7794.97	146893	57.74	24.48
83	16.062a	-4683.52	117208	34.69	19.53
84	11.302a	-1575.28	102325	11.67	17.05
85	6.542a	1529.75	102231	11.33	17.04
86	1.782a	4643.52	116935	34.40	19.49
87	2.978f	7764.14	146476	57.51	24.41
88	7.738f	7049.98	181744	52.22	30.29
89	12.498f	6339.88	213623	46.96	35.60
90	17.258f	5633.83	242131	41.73	40.36
91	22.018f	4931.83	267288	36.53	44.55
92	26.778f	4237.79	289109	31.39	48.18
93	31.538f	3554.33	307672	26.33	51.28
94	36.298f	2868.02	322972	21.24	53.83
95	41.058f	2175.52	334990	16.11	55.83
96	45.818f	1476.83	343698	10.94	57.28
97	50.578f	729.07	349011	5.40	58.17
98	55.338f	-61.86	350611	0.46	58.44
99	60.098f	-851.35	348449	6.31	58.07
100	64.858f	-1635.67	342541	12.12	57.09

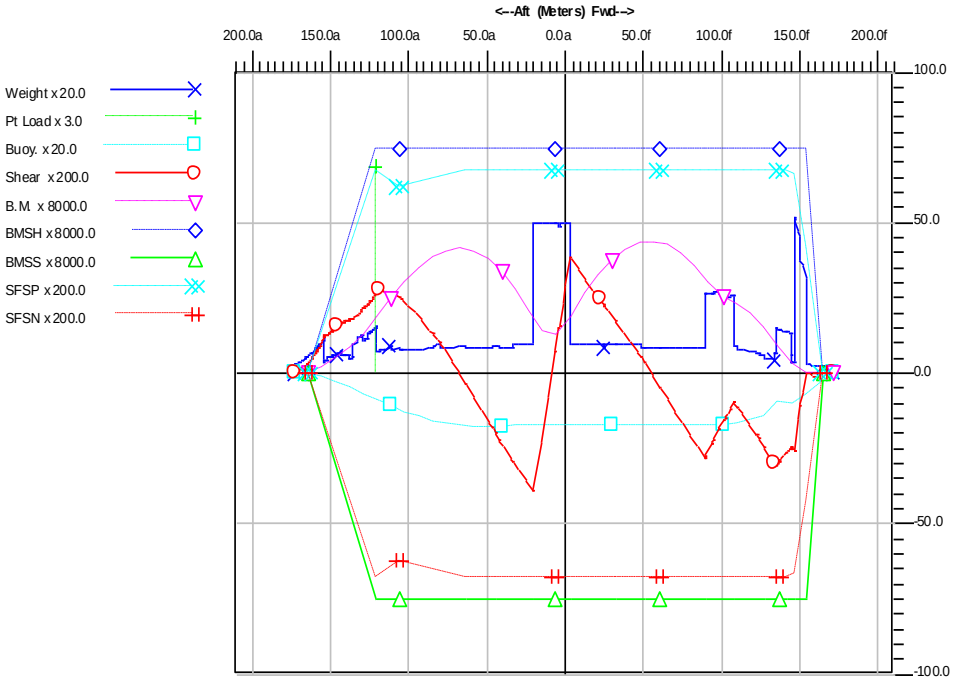
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
101	69.618f	-2418.55	332904	17.92	55.48
102	74.378f	-3199.99	319544	23.70	53.26
103	79.138f	-3979.99	302467	29.48	50.41
104	83.898f	-4758.30	281682	35.25	46.95
105	88.658f	-5534.13	257197	40.99	42.87
106	93.418f	-4623.35	233033	34.25	38.84
107	98.178f	-3647.45	213315	27.02	35.55
108	102.938f	-2725.24	198215	20.19	33.04
109	107.698f	-1857.62	187283	13.76	31.21
110	112.458f	-2574.89	176796	19.07	29.47
111	117.218f	-3327.85	162755	24.65	27.13
112	121.978f	-4066.00	145164	30.12	24.19
113	126.738f	-4839.01	123990	35.84	20.66
114	131.563f	-5665.30	98638	41.97	16.44
115	136.388f	-5778.16	70271	42.80	11.71
116	141.213f	-5167.54	43857	38.28	7.31
117	146.038f	-5150.41	19676	38.93	3.28
118	148.613f	-3047.20	9157	26.15	1.53
119	151.188f	-1293.13	3740	12.83	0.62
120	153.763f	101.55	2248	1.19	0.37

Longitudinal Strength At Sea Condition (stbd 0.37 deg.)

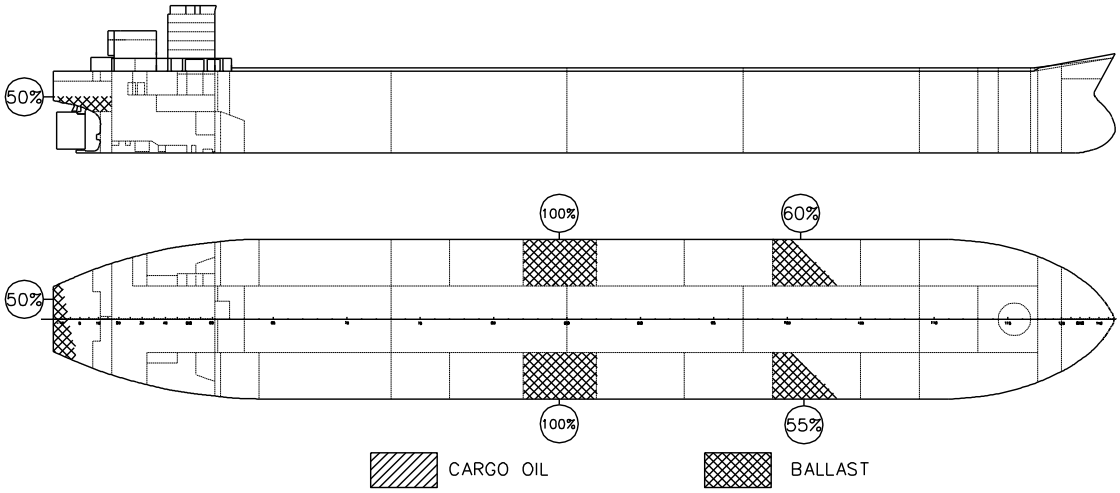
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	2521.13	19076	78.90	13.43
61	120.782a	5639.01	145687	41.77	24.28
64	106.502a	5091.17	222984	40.76	37.16
73	63.662a	-627.33	331972	4.65	55.33
77	44.622a	-3962.31	287911	29.35	47.99
82	20.822a	-7794.97	146893	57.74	24.48
85	6.542a	1529.75	102231	11.33	17.04
87	2.978f	7764.14	146476	57.51	24.41
93	31.538f	3554.33	307672	26.33	51.28
97	50.578f	729.07	349011	5.40	58.17
99	60.098f	-851.35	348449	6.31	58.07
105	88.658f	-5534.13	257197	40.99	42.87
109	107.698f	-1857.62	187283	13.76	31.21
113	126.738f	-4839.01	123990	35.84	20.66
114*	133.525f	-5972.19	87212	44.24	14.54
115	136.388f	-5778.16	70271	42.80	11.71
116	141.213f	-5167.54	43857	38.28	7.31
116*	144.075f	-4917.32	29550	36.86	4.92
117	146.038f	-5150.41	19676	38.93	3.28
120	153.763f	101.55	2248	1.19	0.37

Max. Shear	-7795.04 MT	at	20.822a		57.74%Max
Max. Bending Moment	350611 MT-m	at	55.338f	(Hogging)	58.44%Max

Longitudinal Strength At Sea Condition



Condition no.22: TRANSPORT CONDITION – 100% CONSUMABLES



Floating Status

Draft FP	4.448m	Heel	stbd 0.07 deg.	GM(Solid)	22.705m
Draft MS	6.083m	Equil	Yes	F/S Corr	0.346m
Draft AP	7.719m	Wind	0.0 kn	GM(Fluid)	22.359m
Trim	aft 3.27/329.18	Wave	No	KMT	37.999 m
LCG	0.698f	VCG	15.295 m	TPcm	145.19

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	36,874.16	8.725f	0.494p	12.076
Displacement	82,324.16	0.698f	0.030s	15.295

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
PROVISIONS	20.40	131.422a	7.400p	29.100
Total Fixed	**45,676.50**	**6.390a**	**0.451s**	**17.954**

Tank Status

WATER BALLAST (SpGr 1.025)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N2A COT_SEP.P	60.00%	7,106.64	74.335f	18.318p	8.142	8,380.02
N2A COT_SEP.S	55.00%	6,514.42	74.331f	18.319s	7.468	8,379.99
N3B BALLAST.P	100.00%	9,870.29	8.922a	18.280p	13.534	0.00
N3B BALLAST.S	100.00%	9,870.29	8.922a	18.280s	13.534	0.00
AFTER PEAK	50.00%	1,163.34	161.084a	0.012s	17.912	11,050.58
Subtotals:		**34,524.97**	**18.797f**	**0.314p**	**11.427**	**27,810.58**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.171a	2.771p	0.787	174.47
DRAIN TK.C	50.00%	30.21	144.357a	0.003s	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.571a	13.336p	8.255	128.47
SEWAGE.S	50.00%	132.51	123.570a	13.339s	8.255	128.77
Subtotals:		**343.06**	**126.740a**	**0.385p**	**6.674**	**499.62**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	100.00%	301.39	156.725a	9.274p	25.423	0.00
POTABLE W.S	100.00%	333.92	156.834a	8.760s	25.421	0.00
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**657.67**	**156.476a**	**0.602s**	**25.271**	**0.00**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	98.00%	99.98	122.684a	12.822p	22.434	18.67
DO SETTLING 1	98.00%	139.97	127.245a	12.822p	22.434	26.14
DO DAILY.P	98.00%	80.06	131.423a	12.822p	22.434	14.95
DO STORAGE.P	98.00%	517.29	141.444a	13.613p	23.178	73.37
DO STORAGE.S	98.00%	258.02	137.891a	12.540s	22.974	31.25
Subtotals:		**1,095.33**	**136.348a**	**7.221p**	**22.913**	**164.37**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.723a	12.280s	20.954	4.45
Subtotals:		**26.63**	**144.723a**	**12.280s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	7162.9	10.9	13.9	16396
ACOMODATIONS	311.4	31.4	34.4	2329
ACOMOD AFT	171.7	27.3	30.2	1035
HELIDECK	33.5	33.6	36.6	315
V-533603	15.3	23.8	26.8	37
V-533604A	15.3	23.8	26.8	37
MODULE M01,M02,M04 (base)	123.5	27.7	30.7	892
MODULE M01	179.3	30.3	33.2	540
MODULE M02	163.6	30.4	33.3	494
MODULE M04	251.1	32.5	35.4	1936
MODULE M03(base)	37.9	25.9	28.8	257
MODULE M03	250.7	36.3	39.2	972
VE SKID SUP.P	46.7	28.6	31.5	400
SKID FORE.P	71.0	26.1	29.1	562
CRANE CV77.S	107.9	29.9	32.9	965
CRANE CV69.P	107.3	29.8	32.8	956
CRANE CV109.P	105.3	30.2	33.1	948
TURRET	442.2	33.4	36.3	4767
LAYDOW AREA	38.1	25.1	28.1	252
CO2 ROOM.S	21.7	23.0	25.9	112
V-541202	26.4	25.2	28.1	67
Fender	55.6	23.3	26.3	106
Total	**9738.4**			**34378**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	34378.00s
80.000s	34378.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.57a	6.082	-0.447	0.000	23.447 (1)	
5.00s	0.57a	6.049	1.508	0.046	21.768 (1)	
10.00s	0.56a	5.943	3.482	0.264	19.950 (1)	
15.00s	0.56a	5.720	5.293	0.648	18.016 (1)	
20.00s	0.59a	5.222	6.352	1.162	16.106 (1)	
30.00s	0.67a	3.478	6.972	2.346	12.499 (1)	
40.00s	0.74a	0.985	6.658	3.545	9.145 (1)	
50.00s	0.77a	-2.072	5.926	4.649	6.070 (1)	
60.00s	0.80a	-5.319	4.465	5.568	3.001 (1)	
69.85s	0.80a	-8.441	2.386	6.164	-0.003 (1)	FldPt
70.00s	0.80a	-8.481	2.353	6.170	-0.051 (1)	
79.84s	0.77a	-11.409	0.000	6.374	-2.970 (1)	RaZero
80.00s	0.77a	-11.444	-0.038	6.374	-3.025 (1)	

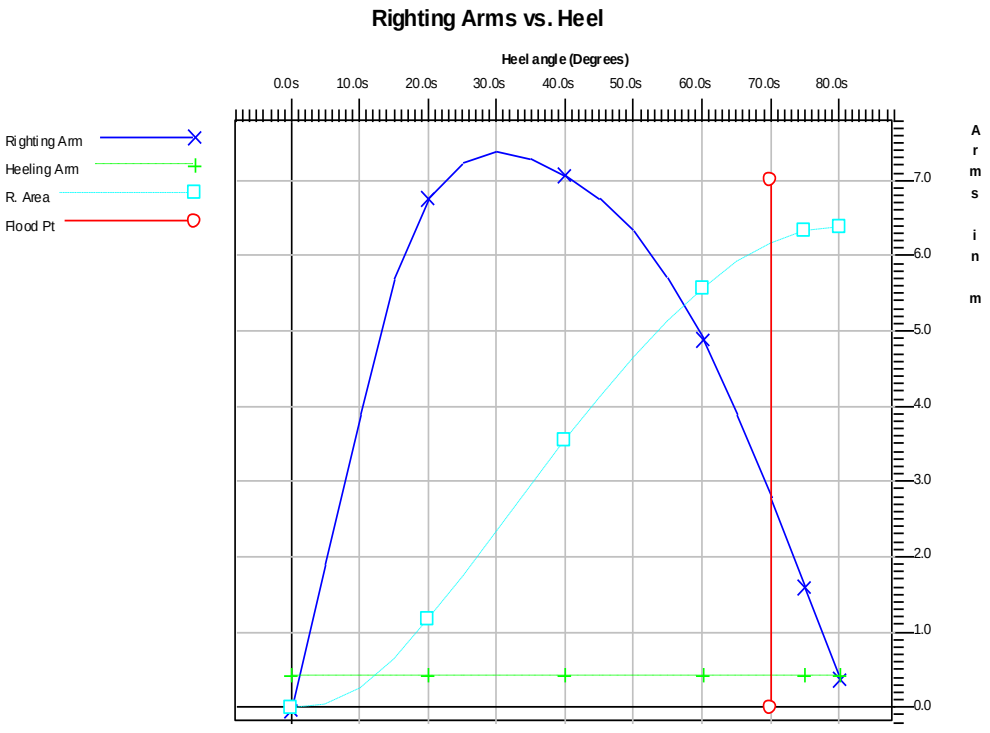
Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	23.447

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	13.109	11.709	Yes



Longitudinal Strength At Sea Condition (stbd 0.07 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	3106.08	21171	97.20	14.91
20	151.942a	3254.78	28478	83.50	16.44
24	148.902a	3497.53	38842	72.34	18.08
28	145.862a	3797.91	49970	65.80	19.48
32	142.822a	4176.44	62197	62.26	20.86
36	139.782a	4445.16	75405	58.14	22.19
40	136.742a	4618.89	89298	53.82	23.41
44	133.702a	4964.52	103877	52.16	24.55
48	130.662a	5320.97	119619	50.89	25.74
52	127.622a	5627.45	136361	49.40	26.93
56	124.582a	6012.54	154104	48.77	28.12
60	121.542a	6425.72	173093	48.44	29.36
61	120.782a	6738.09	178119	49.91	29.69
62	116.022a	6478.48	209750	49.22	34.96
63	111.262a	6119.74	239913	47.71	39.99
64	106.502a	5545.58	267844	44.40	44.64
65	101.742a	4885.50	292849	38.77	48.81
66	96.982a	4135.30	314488	32.52	52.41
67	92.222a	3310.53	332374	25.81	55.40
68	87.462a	2417.94	346172	18.69	57.70
69	82.702a	1511.72	355628	11.58	59.27
70	77.942a	559.41	360766	4.25	60.13
71	73.182a	-475.06	361117	3.58	60.19
72	68.422a	-1537.21	356463	11.48	59.41
73	63.662a	-2612.32	346738	19.35	57.79
74	58.902a	-3682.63	331889	27.28	55.31
75	54.142a	-4740.28	311975	35.11	52.00
76	49.382a	-5785.26	287057	42.85	47.84
77	44.622a	-6771.91	257249	50.16	42.87
78	39.862a	-7746.13	222883	57.38	37.15
79	35.102a	-8753.11	183747	64.84	30.62
80	30.342a	-9662.82	139997	71.58	23.33
81	25.582a	-10533.59	92064	78.03	15.34
82	20.822a	-11396.82	40005	84.42	6.67
83	16.062a	-8304.77	-6751	61.52	1.13
84	11.302a	-5205.26	-38770	38.56	6.46
85	6.542a	-2098.30	-56017	15.54	9.34
86	1.782a	1014.10	-58465	7.51	9.74
87	2.978f	4144.06	-46057	30.70	7.68
88	7.738f	3341.50	-28110	24.75	4.68
89	12.498f	2554.27	-13946	18.92	2.32
90	17.258f	1782.36	-3493	13.20	0.58
91	22.018f	1025.78	3322	7.60	0.55
92	26.778f	288.43	6568	2.14	1.09
93	31.538f	-427.09	6377	3.16	1.06
94	36.298f	-1137.52	2788	8.43	0.46
95	41.058f	-1842.87	-4169	13.65	0.69
96	45.818f	-2543.14	-14472	18.84	2.41
97	50.578f	-3281.21	-28150	24.31	4.69
98	55.338f	-4047.51	-45460	29.98	7.58
99	60.098f	-4801.14	-66387	35.56	11.06
100	64.858f	-3254.38	-85424	24.11	14.24

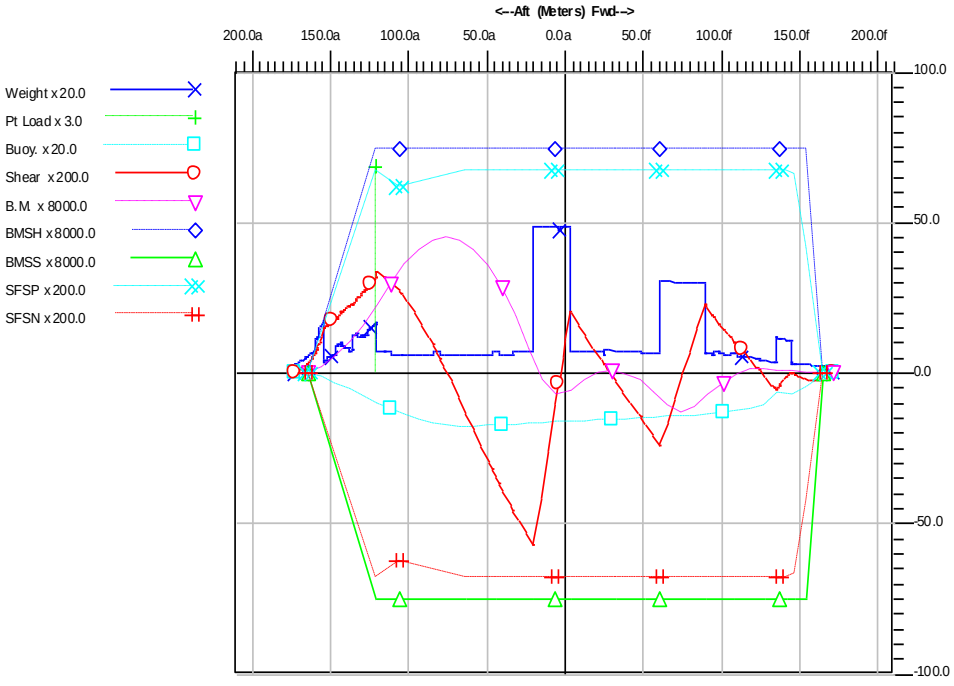
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
101	69.618f	-1701.87	-97084	12.61	16.18
102	74.378f	-143.61	-101341	1.06	16.89
103	79.138f	1420.38	-98167	10.52	16.36
104	83.898f	2990.12	-87535	22.15	14.59
105	88.658f	4565.61	-69417	33.82	11.57
106	93.418f	3908.84	-49116	28.95	8.19
107	98.178f	3335.17	-31792	24.70	5.30
108	102.938f	2736.51	-17171	20.27	2.86
109	107.698f	2144.81	-5470	15.89	0.91
110	112.458f	1565.71	3542	11.60	0.59
111	117.218f	968.64	9700	7.18	1.62
112	121.978f	401.92	13087	2.98	2.18
113	126.738f	-185.86	13742	1.38	2.29
114	131.563f	-732.55	11637	5.43	1.94
115	136.388f	-740.43	7622	5.48	1.27
116	141.213f	-162.69	5564	1.21	0.93
117	146.038f	-22.94	5769	0.17	0.96
118	148.613f	-159.64	5601	1.37	0.93
119	151.188f	-264.40	5123	2.62	0.85
120	153.763f	-330.00	4378	3.88	0.73

Longitudinal Strength At Sea Condition (stbd 0.07 deg.)

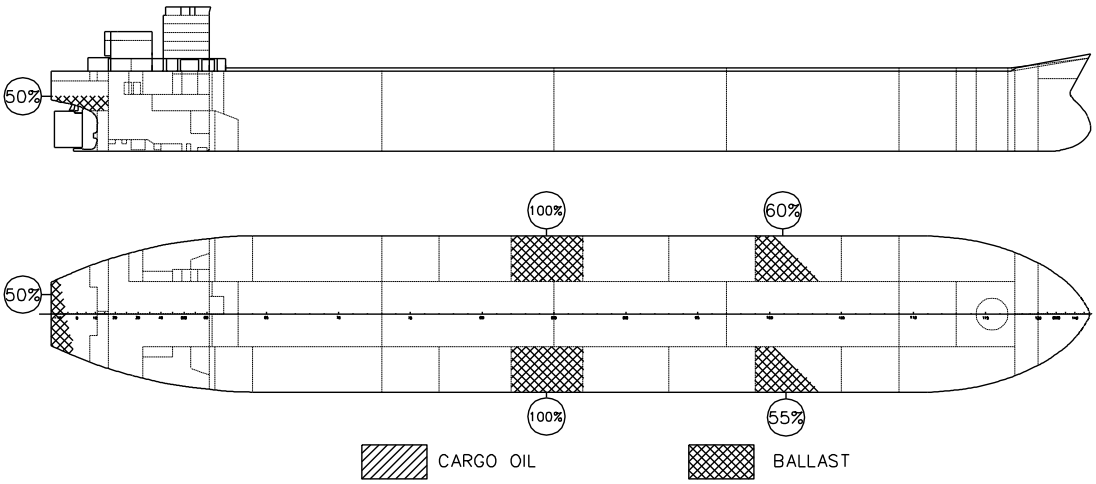
Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	3106.08	21171	97.20	14.91
61	120.782a	6738.09	178119	49.91	29.69
64	106.502a	5545.58	267844	44.40	44.64
73	63.662a	-2612.32	346738	19.35	57.79
77	44.622a	-6771.91	257249	50.16	42.87
82	20.822a	-11396.82	40005	84.42	6.67
85	6.542a	-2098.30	-56017	15.54	9.34
87	2.978f	4144.06	-46057	30.70	7.68
93	31.538f	-427.09	6377	3.16	1.06
97	50.578f	-3281.21	-28150	24.31	4.69
99	60.098f	-4801.14	-66387	35.56	11.06
105	88.658f	4565.61	-69417	33.82	11.57
109	107.698f	2144.81	-5470	15.89	0.91
113	126.738f	-185.86	13742	1.38	2.29
114*	133.525f	-933.95	10039	6.92	1.67
115	136.388f	-740.43	7622	5.48	1.27
116	141.213f	-162.69	5564	1.21	0.93
116*	144.075f	93.46	5642	0.70	0.94
117	146.038f	-22.94	5769	0.17	0.96
120	153.763f	-330.00	4378	3.88	0.73

Max. Shear	-11396.89 MT	at	20.822a		84.42%Max
Max. Bending Moment	361117 MT-m	at	73.182a	(Hogging)	60.19%Max

Longitudinal Strength At Sea Condition



Condition no.23: TRANSPORT CONDITION – 10% CONSUMABLES



Floating Status

Draft FP	4.738m	Heel	stbd 0.27 deg.	GM(Solid)	23.421m
Draft MS	5.944m	Equil	Yes	F/S Corr	0.380m
Draft AP	7.150m	Wind	0.0 kn	GM(Fluid)	23.042m
Trim	aft 2.41/329.18	Wave	No	KMT	38.543 m
LCG	3.566f	VCG	15.122 m	TPcm	145.01

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	45,450.00	5.814a	0.456s	17.907
Deadweight	35,279.21	15.650f	0.330p	11.534
Displacement	80,729.21	3.566f	0.112s	15.122

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	45,450.00	5.814a	0.456s	17.907
CONSTANTS	206.10	121.170a	0.310s	27.220
PROVISIONS	2.40	131.422a	7.400p	29.100
Total Fixed	**45,658.50**	**6.341a**	**0.454s**	**17.950**

Tank Status

WATER BALLAST (SpGr 1.025)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
N2A COT_SEP.P	60.00%	7,106.64	74.346f	18.314p	8.142	8,380.08
N2A COT_SEP.S	55.00%	6,514.42	74.343f	18.323s	7.468	8,380.09
N3B BALLAST.P	100.00%	9,870.29	8.922a	18.280p	13.534	0.00
N3B BALLAST.S	100.00%	9,870.29	8.922a	18.280s	13.534	0.00
AFTER PEAK	50.01%	1,163.34	161.064a	0.045s	17.912	11,059.22
Subtotals:		**34,524.97**	**18.802f**	**0.311p**	**11.427**	**27,819.39**

Misc. (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
BILGE TK.P	50.00%	47.83	133.164a	2.759p	0.787	173.22
DRAIN TK.C	50.00%	30.21	144.353a	0.011s	2.118	67.91
OVERFLOW.P	50.00%	132.51	123.569a	13.333p	8.255	128.10
SEWAGE.S	50.00%	132.51	123.567a	13.342s	8.255	129.19
Subtotals:		**343.06**	**126.736a**	**0.380p**	**6.673**	**498.42**

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
POTABLE W.P	7.23%	21.80	156.699a	8.513p	23.439	1,023.91
POTABLE W.S	6.53%	21.80	156.878a	8.523s	23.422	1,255.91
DEST WATER.S	100.00%	22.36	147.762a	11.865s	21.000	0.00
Subtotals:		**65.96**	**153.728a**	**4.025s**	**22.606**	**2,279.82**

DIESEL OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
DO SETTLING 2	14.72%	15.01	122.690a	12.817p	19.269	18.67
DO SETTLING 1	10.51%	15.01	127.264a	12.814p	19.110	26.14
DO DAILY.P	98.00%	80.06	131.423a	12.822p	22.434	14.95
Subtotals:		**110.09**	**129.665a**	**12.820p**	**21.549**	**59.76**

LUBE OIL (SpGr 0.897)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	FSM (MT-m)
LO STORAGE.S	98.00%	26.63	144.723a	12.281s	20.954	4.45
Subtotals:		**26.63**	**144.723a**	**12.281s**	**20.954**	**4.45**

Heeling Moment Calculations

Part	LPA (m2)	HCP (m)	Arm (m)	Heeling Moment (t.m)
HULL	7162.9	10.9	13.9	16396
ACOMODATIONS	311.4	31.4	34.4	2329
ACOMOD AFT	171.7	27.3	30.2	1035
HELIDECK	33.5	33.6	36.6	315
V-533603	15.3	23.8	26.8	37
V-533604A	15.3	23.8	26.8	37
MODULE M01,M02,M04 (base)	123.5	27.7	30.7	892
MODULE M01	179.3	30.3	33.2	540
MODULE M02	163.6	30.4	33.3	494
MODULE M04	251.1	32.5	35.4	1936
MODULE M03(base)	37.9	25.9	28.8	257
MODULE M03	250.7	36.3	39.2	972
VE SKID SUP.P	46.7	28.6	31.5	400
SKID FORE.P	71.0	26.1	29.1	562
CRANE CV77.S	107.9	29.9	32.9	965
CRANE CV69.P	107.3	29.8	32.8	956
CRANE CV109.P	105.3	30.2	33.1	948
TURRET	442.2	33.4	36.3	4767
LAYDOW AREA	38.1	25.1	28.1	252
CO2 ROOM.S	21.7	23.0	25.9	112
V-541202	26.4	25.2	28.1	67
Fender	55.6	23.3	26.3	106
Total	**9738.4**			**34378**

Heeling Moment Report

Heel(deg)	Mmt(m-MT)
80.000p	34378.0s
80.000s	34378.0s

Residual Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.42a	5.944	-0.536	0.000	23.918 (1)	
5.00s	0.42a	5.913	1.478	0.041	22.235 (1)	
10.00s	0.41a	5.809	3.514	0.259	20.416 (1)	
15.00s	0.41a	5.586	5.374	0.648	18.488 (1)	
20.00s	0.43a	5.080	6.436	1.169	16.604 (1)	
30.00s	0.50a	3.327	7.052	2.368	13.038 (1)	
40.00s	0.55a	0.833	6.726	3.579	9.700 (1)	
50.00s	0.58a	-2.232	5.996	4.695	6.651 (1)	
60.00s	0.59a	-5.502	4.558	5.628	3.654 (1)	
70.00s	0.57a	-8.683	2.459	6.247	0.657 (1)	
72.21s	0.56a	-9.362	1.949	6.333	-0.002 (1)	FldPt
80.00s	0.53a	-11.654	0.077	6.471	-2.289 (1)	

Note: Residual Righting Arms shown above are in excess of the heel moments from tabular input.

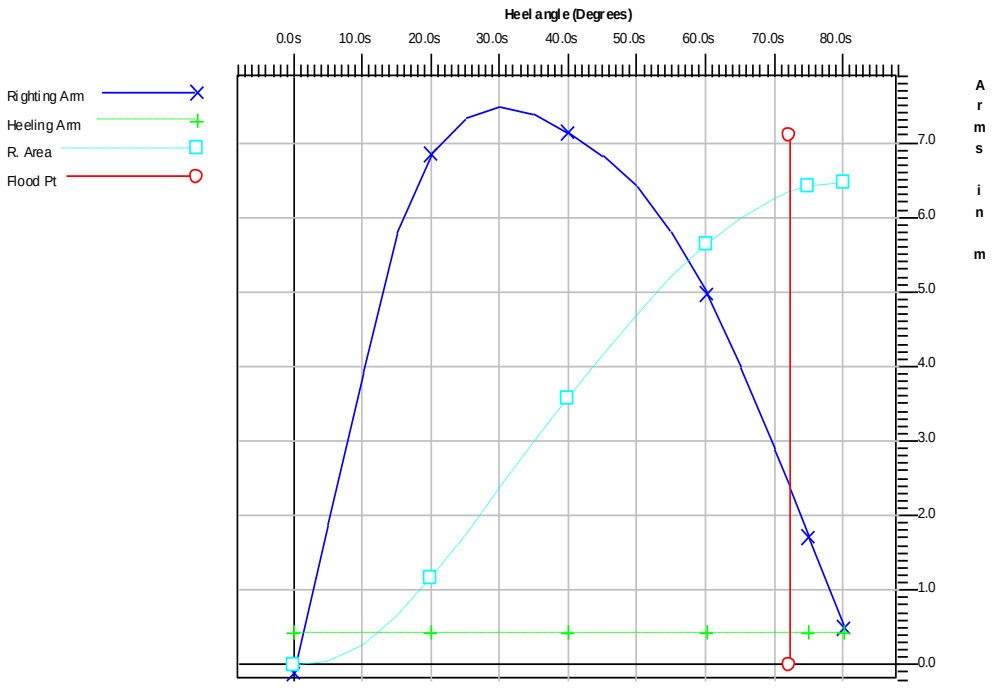
Unprotected Flood Points

Name	L,T,V (m)	Height (m)
(1) Boat Deck Doors at Fr.53 (PS)	126.862a, 18.400s, 30.792	23.918

MODU CODE

Limit	Min/Max	Actual	Margin	Pass
(1) Abs. Area Ratio from 0.00 deg to RAzero or Flood	>1.400	12.801	11.401	Yes

Righting Arms vs. Heel



Longitudinal Strength At Sea Condition (stbd 0.27 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	2518.32	19489	78.81	13.72
20	151.942a	2672.93	25444	68.57	14.69
24	148.902a	2927.47	34031	60.55	15.84
28	145.862a	3163.65	43364	54.81	16.91
32	142.822a	3385.39	53405	50.46	17.91
36	139.782a	3518.38	63976	46.02	18.83
40	136.742a	3560.81	74827	41.49	19.62
44	133.702a	3774.06	86044	39.65	20.34
48	130.662a	4120.75	98003	39.41	21.09
52	127.622a	4406.01	111059	38.68	21.93
56	124.582a	4759.25	125013	38.60	22.81
60	121.542a	5148.53	140131	38.81	23.77
61	120.782a	5455.42	144178	40.41	24.03
62	116.022a	5269.97	169840	40.04	28.31
63	111.262a	4989.70	194397	38.90	32.40
64	106.502a	4497.66	217105	36.01	36.18
65	101.742a	3922.44	237284	31.12	39.55
66	96.982a	3258.84	254506	25.63	42.42
67	92.222a	2521.50	268389	19.66	44.73
68	87.462a	1716.44	278602	13.27	46.43
69	82.702a	897.08	284887	6.87	47.48
70	77.942a	30.26	287265	0.23	47.88
71	73.182a	-920.73	285258	6.94	47.54
72	68.422a	-1902.00	278639	14.21	46.44
73	63.662a	-2899.24	267325	21.48	44.55
74	58.902a	-3894.82	251250	28.85	41.88
75	54.142a	-4880.87	230460	36.15	38.41
76	49.382a	-5857.39	204998	43.39	34.17
77	44.622a	-6778.71	174965	50.21	29.16
78	39.862a	-7690.74	140677	56.97	23.45
79	35.102a	-8638.67	101909	63.99	16.98
80	30.342a	-9492.46	58799	70.31	9.80
81	25.582a	-10310.46	11766	76.37	1.96
82	20.822a	-11124.05	-39151	82.40	6.53
83	16.062a	-7985.40	-84534	59.15	14.09
84	11.302a	-4842.44	-114967	35.87	19.16
85	6.542a	-1695.16	-130429	12.56	21.74
86	1.782a	1454.42	-130906	10.77	21.82
87	2.978f	4618.41	-116359	34.21	19.39
88	7.738f	3846.67	-96117	28.49	16.02
89	12.498f	3087.12	-79521	22.87	13.25
90	17.258f	2339.76	-66510	17.33	11.09
91	22.018f	1604.58	-57028	11.89	9.50
92	26.778f	885.50	-51021	6.56	8.50
93	31.538f	185.11	-48372	1.37	8.06
94	36.298f	-513.33	-49054	3.80	8.18
95	41.058f	-1209.82	-53057	8.96	8.84
96	45.818f	-1904.37	-60370	14.11	10.06
97	50.578f	-2639.86	-71039	19.55	11.84
98	55.338f	-3406.72	-85334	25.23	14.22
99	60.098f	-4164.05	-103258	30.84	17.21
100	64.858f	-2628.62	-119327	19.47	19.89

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
101	69.618f	-1088.75	-128076	8.06	21.35
102	74.378f	455.54	-129486	3.37	21.58
103	79.138f	2004.25	-123535	14.85	20.59
104	83.898f	3557.39	-110200	26.35	18.37
105	88.658f	5114.97	-89463	37.89	14.91
106	93.418f	4432.54	-66646	32.83	11.11
107	98.178f	3830.09	-46934	28.37	7.82
108	102.938f	3199.59	-30071	23.70	5.01
109	107.698f	2573.18	-16285	19.06	2.71
110	112.458f	1956.81	-5361	14.49	0.89
111	117.218f	1320.24	2527	9.78	0.42
112	121.978f	712.17	7452	5.28	1.24
113	126.738f	81.76	9443	0.61	1.57
114	131.563f	-508.76	8485	3.77	1.41
115	136.388f	-556.62	5409	4.12	0.90
116	141.213f	-10.29	4122	0.08	0.69
117	146.038f	93.98	4942	0.71	0.82
118	148.613f	-62.96	5029	0.54	0.84
119	151.188f	-186.64	4754	1.85	0.79
120	153.763f	-269.25	4155	3.17	0.69

Longitudinal Strength At Sea Condition (stbd 0.27 deg.)

Frame No.	Location (m)	Shear (MT)	Bending (MT-m)	Shear (%/Max)	Bending (%/Max)
17	154.222a	2518.32	19489	78.81	13.72
61	120.782a	5455.42	144178	40.41	24.03
64	106.502a	4497.66	217105	36.01	36.18
73	63.662a	-2899.24	267325	21.48	44.55
77	44.622a	-6778.71	174965	50.21	29.16
82	20.822a	-11124.05	-39151	82.40	6.53
85	6.542a	-1695.16	-130429	12.56	21.74
87	2.978f	4618.41	-116359	34.21	19.39
93	31.538f	185.11	-48372	1.37	8.06
97	50.578f	-2639.86	-71039	19.55	11.84
99	60.098f	-4164.05	-103258	30.84	17.21
105	88.658f	5114.97	-89463	37.89	14.91
109	107.698f	2573.18	-16285	19.06	2.71
113	126.738f	81.76	9443	0.61	1.57
114*	133.525f	-728.00	7291	5.39	1.22
115	136.388f	-556.62	5409	4.12	0.90
116	141.213f	-10.29	4122	0.08	0.69
116*	144.075f	226.39	4586	1.70	0.76
117	146.038f	93.98	4942	0.71	0.82
120	153.763f	-269.25	4155	3.17	0.69

Max. Shear	-11124.12 MT	at	20.822a		82.40%Max
Max. Bending Moment	287265 MT-m	at	77.942a	(Hogging)	47.88%Max

Longitudinal Strength At Sea Condition

