

2001

TRIBUNAL MARÍTIMO

C - Processo 19489/01 - P 36
STABILITY BOOK

AUTUAÇÃO

de AGOSTO de dois mil e 01
na Secretaria do Tribunal Marítimo autuo os presentes autos.

Da qual se trata o

JOSE CARLOS PINHEIRO GUSMÃO
DIRETOR
GABINETE DE PLANO DE CONTAS

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

Diretor - Geral da Secretaria



G 7530 - BR - 212 - 1030

CERTIDÃO

CERTIFICO que, nesta data foi enviado o 3º
me do ano o 2º ao processo
19.479/01. 2-36

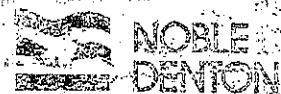
O referido é verdade e dou fé.

Aos 09 de abril de 200 8.

É CÓPIA FIEL DO DOCUMENTO ORIGINAL.

DR. CARLOS PIMENTEL
DIRETOR
DIVISÃO DE REGISTRO

ARCELVINO



Contract No: 7/15/2151

Page 1 of 603

OPERATIONS MANUAL

Volume 7 - Stability Book

RINA **REDAZIONE GENERALE**
ASSOCIATI
 0 232 7522
 6 NOV 2000
 nova,  **RINA**


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Rev.	Location Changes	Brief Description of Change
A	7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.11, 7.14 7.7 7.9 7.12, 7.13, 7.15	Loading Conditions updated with Inclined lightship weight & COG Allowable VCG Curve updated with load condition VCGs added. Detailed Hydrostatics included Revised Reports Included.

FOUO

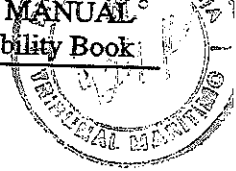
CONCLUSIONS

Dr. Lorenz, 1901

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JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE DESENVOLVIMENTO DE PROJETOS



7 STABILITY BOOK

This section contains the important technical data for ensuring the unit's stability margin remains safe during all operations.

This manual should be read and used by a qualified and experienced Stability Officer. All operations should be properly planned and approved by the Unit's Master prior to commencement.

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JOSE CARLOS PINHEIRO
DIRETOR
DIVISÃO DE REGISTRO



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Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	TCG m from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	0.0	4.4	0.000	0.000
SW Ballast 2P	877.6	1.025	0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	0.0	5.1	0.000	0.000
SW Ballast 3P	728.7	1.025	-3.5	39.0	0.000	0.000
SW Ballast 3S	728.7	1.025	6.1	40.6	0.000	0.000
SW Ballast 4P	798.3	1.025	-0.1	27.7	0.000	0.001
SW Ballast 4S	798.3	1.025	6.3	42.1	0.000	0.000
SW Ballast 5P	256.6	1.025	4.3	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	0.2	41.0	0.000	0.000
SW Ballast 6P	523.9	1.025	8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	-11.7	43.7	0.004	0.013
SW Ballast 7S	555.2	1.025	1.5	18.3	-	-
SW Ballast 11P	644.7	1.025	0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	2.8	15.1	-	-
SW Ballast 13P	644.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	0.8	5.42	0.007	0.055
SW Ballast 16S	249.7	1.025	-0.025	22.11	0.012	0.069
SW Ballast 17P	523.9	1.025				
SW Ballast 17S	523.9	1.025				
SW Ballast 18P	555.2	1.025				
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

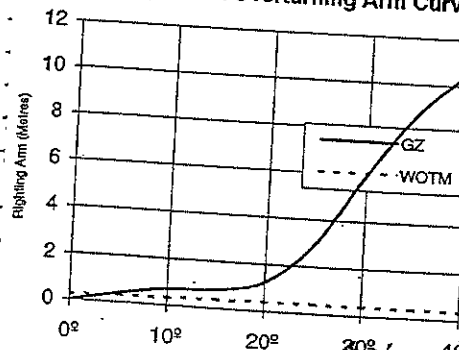
Static Stability

Corrected VCG =	22.12 m	22.18 m
MT / KML =	26.80 m	27.20 m
MT / GML =	4.68 m	5.02 m

Stability Margin

Allowable VCG =	23.04 m
Stability Margin =	0.86 m

Righting Arm & Overturning Arm Curve



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7.1 LOADING CASES FOR TRANSIT, OPERATING, SURVIVAL & INSPECTION CONDITIONS

Loading Conditions attached:

Description	Draft	Comments
Maximum Operating Draft	22.0m	300 Tonnes misc. deck load
Fairlead Inspection Draft	18.0m	300 Tonnes misc. deck load
Transit to Field Condition	11.0m	300 Tonnes misc. deck load

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JOÃO CARLOS FERNANDES GOMES
DIRETOR
DIVISÃO DE OPERAÇÕES E MANUTENÇÃO

Tanks	ID	%	Density	Weight	LCG	ID	Chain	Weight	LCG	TCG	VCG
Drill Water Tanks	8p	100%	1.000	276.2	40.2	1aP	337	63.9	87.52	-30.50	4.60
Drill Water Tanks	8S	100%	1.000	276.2	40.2	1bP	337	63.9	81.65	-30.50	4.60
Drill Water Tanks	9P	100%	1.000	248.5	40.5	5P	337	63.9	86.47	-31.12	16.19
Drill Water Tanks	9S	100%	1.000	248.5	40.5	9P	337	63.9	91.05	-33.48	13.72
Drill Water Tanks	14P	0%	1.000	0.0	72.3	2aP	337	63.9	31.13	-30.50	4.60
Drill Water Tanks	14S	0%	1.000	0.0	72.3	2bP	337	63.9	25.26	-30.50	4.60
Drill Water Tanks	15P	0%	1.000	0.0	72.3	6P	337	63.9	26.31	-31.12	16.19
Drill Water Tanks	15S	0%	1.000	0.0	72.3	10P	337	63.9	21.73	-33.48	13.72
Drill Water Tanks (Process FW)	0			1049.3	40.3	4aS	337	63.9	81.65	30.50	4.60
Potable Water						4bS	337	63.9	87.52	30.50	4.60
Pot Water Tk	1P	100%	1.000	193.8	84.5	8S	337	63.9	86.47	31.12	16.19
Pot Water Tk	1S	100%	1.000	193.8	84.5	12S	337	63.9	91.05	33.48	13.72
Pot Water Day Tk	0	100%	1.000	15.2	78.8	3aS	337	63.9	25.26	30.50	4.60
Potable Water	0			402.7	84.3	3bS	337	63.9	31.13	30.50	4.60
						7S	337	63.9	26.31	31.12	16.19
						11S	337	63.9	21.73	33.48	13.72

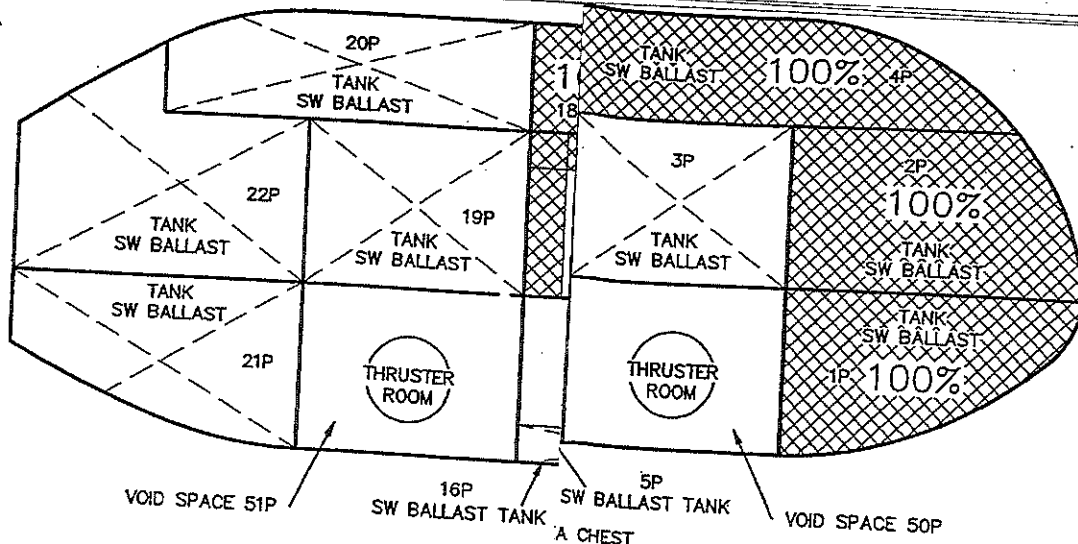
Fuel Oil	ID	%	Density	Weight	LCG	ID	Tension	Weight	LCG	TCG	VCG
FO Tank	10P	100%	0.960	586.3	51.0	S1	140	111.7	24.63	38.00	18.29
FO Tank	10S	100%	0.960	586.3	51.0	S2	140	112.1	28.19	38.00	18.29
FO Tank	12P	100%	0.960	589.5	61.7	S3	140	112.3	31.75	38.00	18.29
FO Tank	12S	100%	0.960	589.5	61.7	S4	140	112.4	35.31	38.00	18.29
FO Overflow	P	100%	0.960	16.4	78.9	S5	140	112.3	81.02	38.00	18.29
FO Overflow	S	100%	0.960	15.1	78.8	S6	140	112.6	84.58	38.00	18.29
Fuel Oil	0			2383.0	56.7	S7	140	112.6	88.14	38.00	18.29
						S8	140	112.5	91.70	38.00	18.29
						P1	140	107.0	24.63	-38.00	18.29
						P2	140	106.5	28.19	-38.00	18.29
						P3	140	106.1	31.75	-38.00	18.29
						P4	140	105.5	35.31	-38.00	18.29
						P5	140	99.6	81.02	-38.00	18.29
						P6	140	100.4	84.58	-38.00	18.29
						P7	140	101.2	88.14	-38.00	18.29
						P8	140	102.4	91.70	-38.00	18.29

Gas Oils	ID	%	Density	Weight	LCG	ID	%	Weight	LCG	TCG	VCG
Gas Storage Tank Port	N1P	0%	0.900	0.0	84.8	TT-01	99%	8.0	63.51	9.85	37.88
Gas Storage Tank Stbd	N1S	0%	0.900	0.0	84.8	TT-02	99%	8.0	49.26	9.85	37.88
aste Oil	N1P	50%	1.000	9.6	80.7	TT-03	25%	10.6	88.40	-31.10	37.88
aste Oil	N1S	50%	1.000	9.6	80.7	TT-04	30%	9.3	81.40	-32.18	37.88
Compressors LO Storage	T65101	100%	0.900	0.8	78.1	TT-05	20%	19.9	85.97	-23.86	37.58
oring Winch LO Storage	T65105	100%	0.900	0.3	78.1	TT-06	60%	30.9	88.61	24.15	37.58
oring Winch LO Storage	T65106	100%	0.900	0.3	78.1	TT-07	60%	31.4	80.51	24.00	37.58
oring Winch LO Storage	T65107	100%	0.900	0.3	78.1	TT-08	5%	4.1	82.90	31.44	37.88
Gen. LO Storage	T65108	100%	0.900	0.3	78.1	TT-09	5%	3.0	69.19	-5.33	37.88
Room LO Storage	T65109	100%	0.900	0.5	78.1	TT-10	50%	16.3	75.27	-8.16	37.78
Room LO Storage	T65110	100%	0.900	0.8	78.1	TT-11	30%	13.1	75.27	-1.02	37.78
Line Lube Oil Console 'C'	T65111	100%	0.900	0.8	78.1	TT-12	20%	6.2	75.37	4.83	37.68
Line Lube Oil Console 'B'	UQ-122308	100%	0.900	15.0	89.6	TT-13	10%	0.6	61.89	-2.75	37.58
Line Lube Oil Console 'A'	UQ-122306	100%	0.900	15.0	89.6	TT-14	10%	2.0	37.67	22.62	37.58
Oils	0			68.2	84.3	TT-15	10%	6.1	73.19	23.30	37.58

Gas Tanks	ID	%	Density	Weight	LCG	ID	%	Weight	LCG	TCG	VCG
ing T	P	50%	1.000	2.6	78.4	MD-01	20%	5.6	65.89	8.51	43.87
ring Drain Tank	S	50%	1.000	2.6	78.4	MD-02	35%	9.7	48.89	8.51	43.87
ring Drain Tank	P	50%	1.000	1.4	77.1	MD-03	60%	27.6	48.89	8.51	43.87
erator Tower (Port)	C-51001	100%	1.000	37.9	85.1	0		42.9	51.10	8.51	43.87
erator Tower (Starb)	C-52001	100%	1.000	37.9	85.1						
ary Generator DO	GE-514001	100%	0.870	1.0	54.1						
olumn Separator Tank	N1P	100%	1.000	13.8	79.1						
olumn Separator Tank	N1S	100%	1.000	13.8	79.1						
Gas Tanks	0			112.5	82.1						

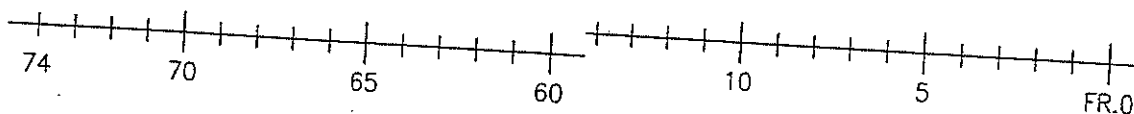
Structural Tanks	ID	%	Density	Weight	LCG	ID	%	Weight	LCG	TCG	VCG
Imn p-tk	T05001A	0%	1.316	0.0	25.1	LD-01	0%	0.0	21.10	-35.80	43.90
Imn p-tk	T05001B	0%	1.316	0.0	25.1	LD-02	40%	30.4	37.14	10.07	43.00
Imn p-tk	T05001A	0%	1.316	0.0	25.1	LD-03	40%	30.0	38.55	-3.52	43.00
Imn p-tk	T05001B	0%	1.316	0.0	25.1	LD-04	40%	21.3	39.27	-11.28	43.00
Refuel	A58001	100%	1.000	7.9	25.1	LD-05	50%	29.6	95.42	0.43	43.00
Disp	A58002	100%	1.000	0.1	25.1	LD-06	50%	28.3	95.44	15.43	43.00
ator DO Day Tank	T59305	100%	0.870	0.2	21.1	LD-07	50%	31.9	95.44	30.80	43.00
lem Dosing Tank	T55101	100%	1.000	2.0	63.1	LD-08	0%	0.0	73.34	-5.46	43.00
oling Exansion Tank	T55102	100%	1.000	0.5	63.1	LD-09	0%	0.0	73.34	9.54	43.00
ater Separators	V-66201/V-66202	100%	0.900	1.4	80.1	LD-10	0%	0.0	73.34	24.54	43.00
Sump Tank	TQ-123301	60%	1.080	12.1	55.1	LD-11	60%	127.2	106.05	-19.00	36.58
op Sump Tank	V-533605	50%	1.000	8.0	76.1	0		298.7	52.07	5.21	43.00
Structural Tanks	0			32.1	56.1						

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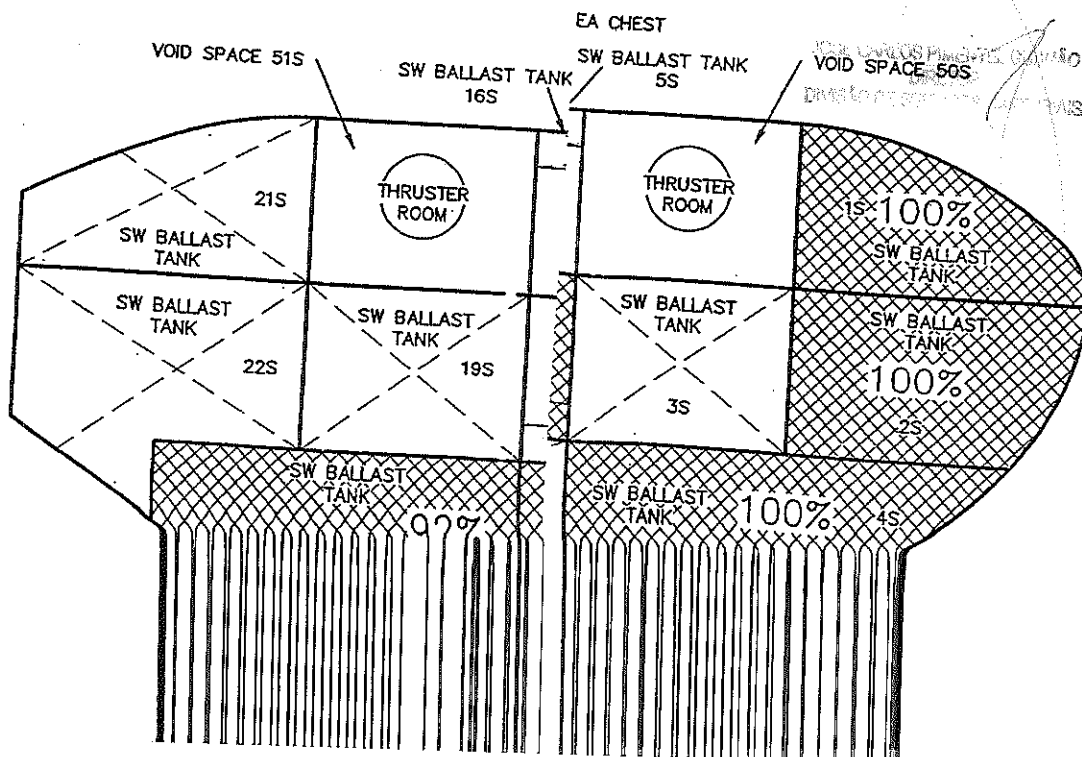


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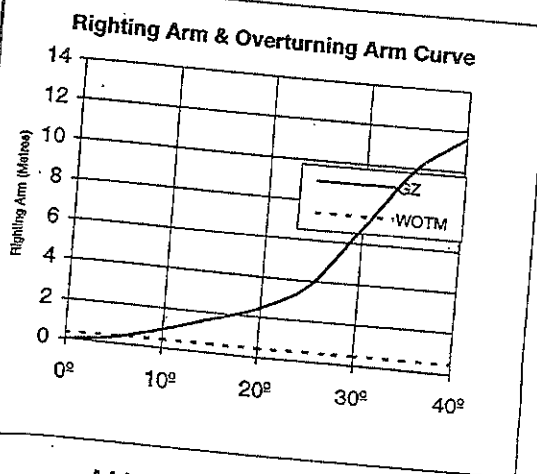
Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	TCG n from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	0.0	4.4	0.000	0.000
SW Ballast 2P	877.6	1.025	0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	0.0	5.1	0.000	0.000
SW Ballast 3P	728.7	1.025	-3.5	39.0	0.001	0.000
SW Ballast 3S	728.7	1.025	6.1	40.6	0.000	0.000
SW Ballast 4P	798.3	1.025	-0.1	27.7	0.000	0.001
SW Ballast 4S	798.3	1.025	6.3	42.1	0.000	0.000
SW Ballast 5P	256.6	1.025	4.3	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	0.2	41.0	0.000	0.000
SW Ballast 6P	523.9	1.025	8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	-11.7	43.7	0.005	0.014
SW Ballast 7S	555.2	1.025	1.5	18.3	-	-
SW Ballast 11P	644.7	1.025	0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	2.8	15.1	-	-
SW Ballast 13P	644.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	1.9	5.33	0.012	0.041
SW Ballast 16S	249.7	1.025	-0.023	24.12	0.017	0.056
SW Ballast 17P	523.9	1.025				
SW Ballast 17S	523.9	1.025				
SW Ballast 18P	555.2	1.025				
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

Static Stability

Corrected VCG =	24.14 m	24.18 m
KMT / KML =	27.60 m	28.10 m
KMT / GML =	3.46 m	3.92 m

Stability Margin

Allowable VCG =	25.23 m
Stability Margin =	1.05 m



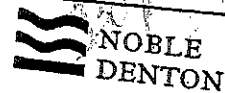
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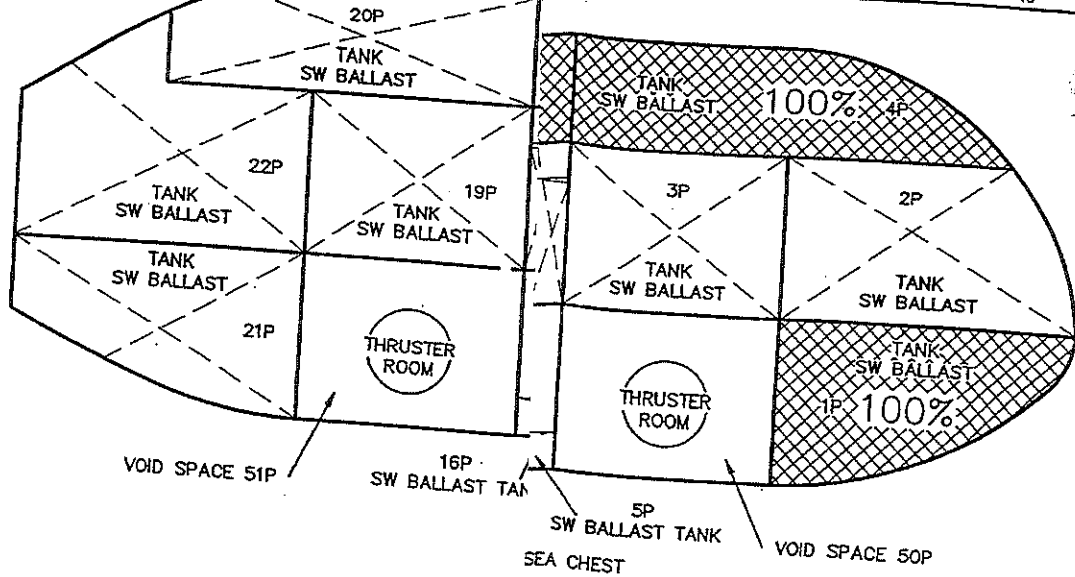
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JOSE CARLOS Pires de F. OLIVEIRA

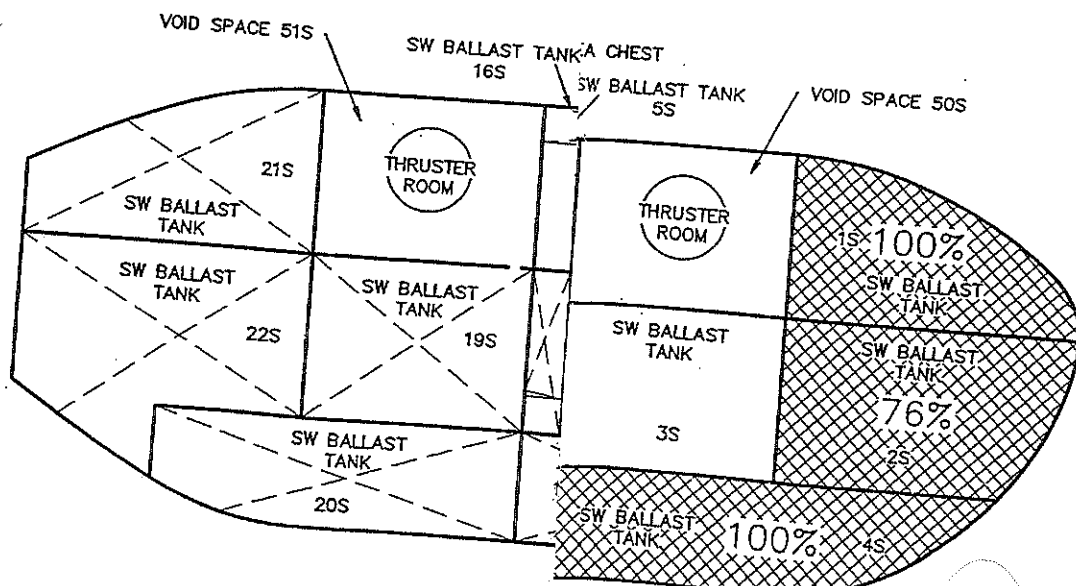
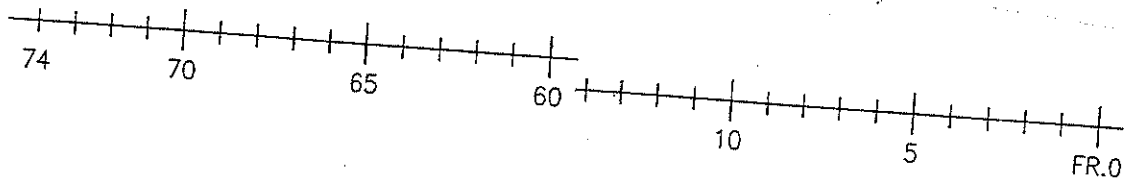


Drill Water Tanks					Drill Water Tanks (Process FW)					Potable Water					Fuel Oil					Diesel Oil					Lub Oils					Drains Storage Tank Port					Drains Storage Tank Stbd					Waste Oil					Air Compressors LO Storage					Mooring Winch LO Storage					Mooring Winch LO Storage					Mooring Winch LO Storage					im. Gen. LO Storage					V Room LO Storage					V Room LO Storage					urine Lube Oil Console 'C'					urine Lube Oil Console 'B'					urine Lube Oil Console 'A'					b Oils					Miscellaneous Tanks					Structural Tanks					Structural Tanks																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%	Density	Weight		ID	%



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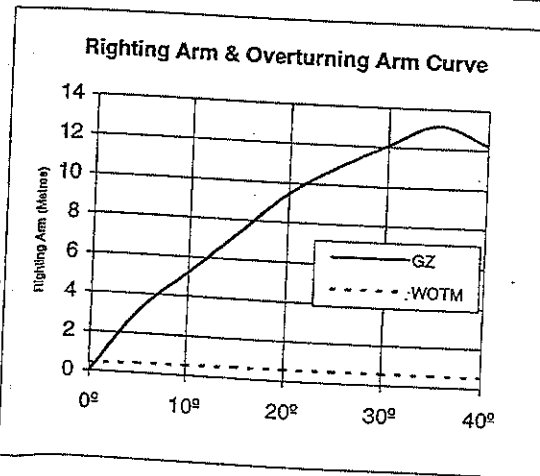
Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	TCG m from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	-3.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	-1.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	-6.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	-9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	1.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	-0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	0.0	0.0	-	-
SW Ballast 11P	644.7	1.025	0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	0.0	12.2	0.000	0.000
SW Ballast 13S	644.7	1.025	0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	2.53	5.39	0.007	0.071
SW Ballast 16S	249.7	1.025	-0.02	26.99	0.010	0.072
SW Ballast 17P	523.9	1.025				
SW Ballast 17S	523.9	1.025				
SW Ballast 18P	555.2	1.025				
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

Statical Stability

Corrected VCG =	27.00 m	27.06 m
KMT / KML =	70.50 m	109.20 m
GMT / GML =	43.50 m	82.14 m

Stability Margin

Allowable VCG =	44.90 m
Stability Margin =	17.84 m



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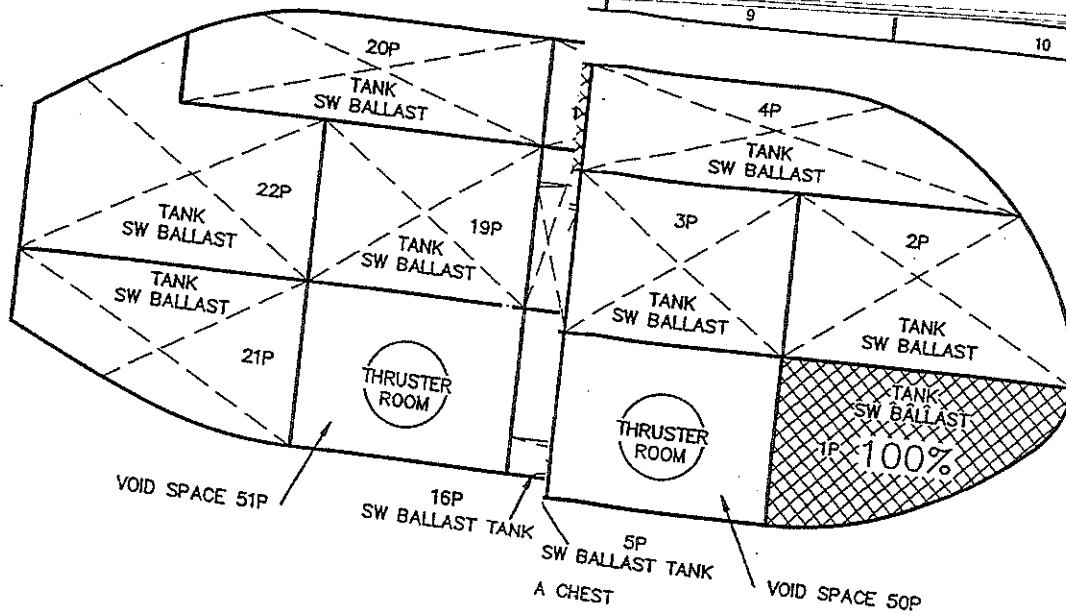
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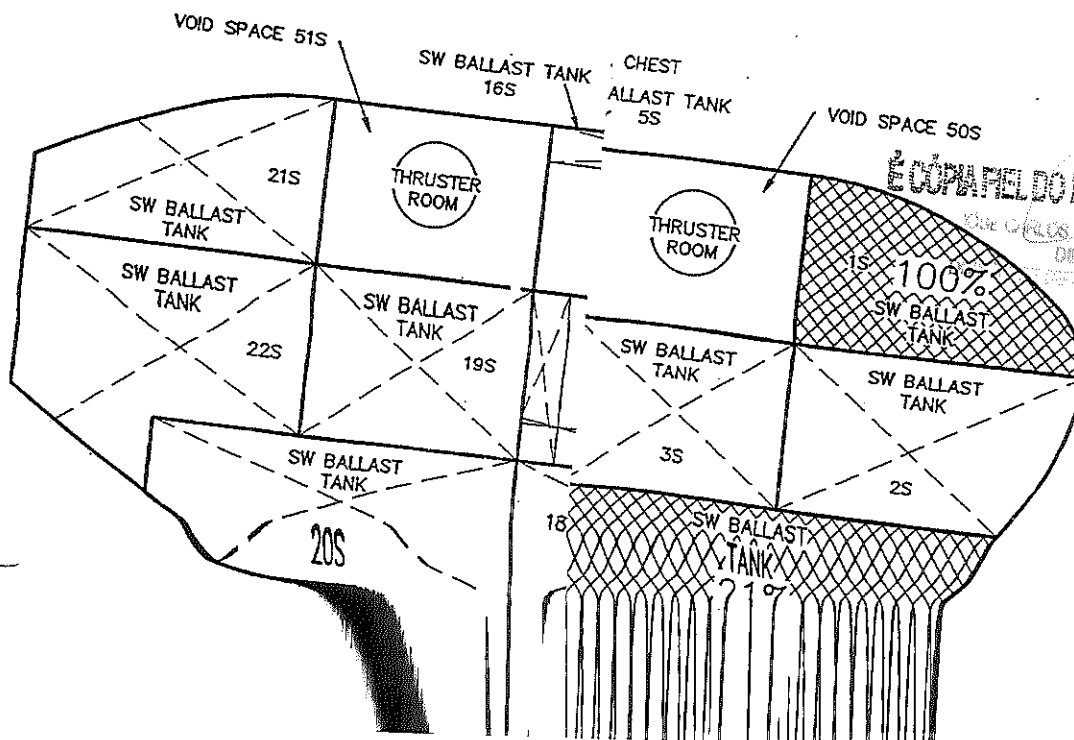
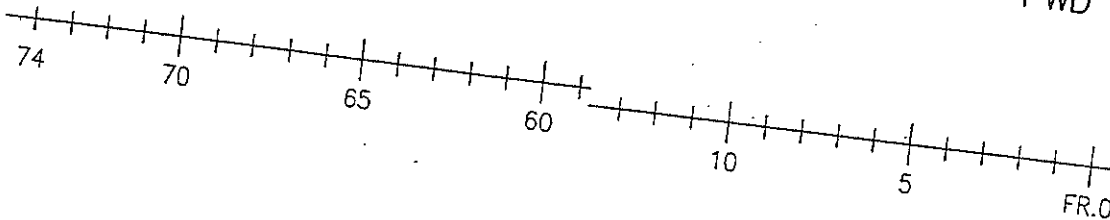
JOSE CARLOS FERNANDES OLIVEIRA
DEPARTAMENTO DE
DESENVOLVIMENTO

Drill Water Tanks	ID	%	Density	Weight	CG	LCG	TCG	VCG
Drill Water Tanks	8S	0%	1.000	0.0	0.0	0.0	0.0	0.0
Drill Water Tanks	9P	0%	1.000	0.0	0.0	0.0	0.0	0.0
Drill Water Tanks	9S	0%	1.000	0.0	0.0	0.0	0.0	0.0
Drill Water Tanks	14P	0%	1.000	0.0	0.0	0.0	0.0	0.0
Drill Water Tanks	14S	0%	1.000	0.0	0.0	0.0	0.0	0.0
Drill Water Tanks	15P	0%	1.000	0.0	0.0	0.0	0.0	0.0
Drill Water Tanks	15S	0%	1.000	0.0	0.0	0.0	0.0	0.0
Drill Water Tanks (Process FW)	0	0%	1.000	0.0	0.0	0.0	0.0	0.0
Potable Water	ID	%	Density	Weight	CG	LCG	TCG	VCG
Pot Water Tk	1P	100%	1.000	193.8	193.8	193.8	193.8	193.8
Pot Water Tk	1S	100%	1.000	193.8	193.8	193.8	193.8	193.8
Pot Water Day Tk	0	100%	1.000	15.2	15.2	15.2	15.2	15.2
Potable Water	0	100%	1.000	15.2	15.2	15.2	15.2	15.2
Fuel Oil	ID	%	Density	Weight	CG	LCG	TCG	VCG
FO Tank	10P	0%	0.960	0.0	0.0	0.0	0.0	0.0
FO Tank	10S	0%	0.960	0.0	0.0	0.0	0.0	0.0
FO Tank	12P	0%	0.960	0.0	0.0	0.0	0.0	0.0
FO Tank	12S	0%	0.960	0.0	0.0	0.0	0.0	0.0
FO Overflow	P	50%	0.960	8.2	8.2	8.2	8.2	8.2
FO Overflow	S	50%	0.960	7.6	7.6	7.6	7.6	7.6
Fuel Oil	0	0%	0.960	15.8	15.8	15.8	15.8	15.8
DO Sludge	ID	%	Density	Weight	CG	LCG	TCG	VCG
DO Sludge	N1P	0%	0.870	0.0	0.0	0.0	0.0	0.0
DO Sludge	N1S	0%	0.870	0.0	0.0	0.0	0.0	0.0
DO Day Tk	N1P	100%	0.870	105.3	105.3	105.3	105.3	105.3
DO Day Tk	N2P	100%	0.870	110.6	110.6	110.6	110.6	110.6
DO Settling	N3S	100%	0.870	73.5	73.5	73.5	73.5	73.5
DO Service	N4S	100%	0.870	73.5	73.5	73.5	73.5	73.5
Diesel Oil	0	100%	0.870	11.2	11.2	11.2	11.2	11.2
Lub Oils	ID	%	Density	Weight	CG	LCG	TCG	VCG
Drains Storage Tank Port	N1P	0%	0.900	0.0	0.0	0.0	0.0	0.0
Drains Storage Tank Sbd	N1S	0%	0.900	0.0	0.0	0.0	0.0	0.0
Waste Oil	N1P	10%	1.000	1.9	1.9	1.9	1.9	1.9
Waste Oil	N1S	10%	1.000	1.9	1.9	1.9	1.9	1.9
Air Compressors LO Storage	T65101	100%	0.900	0.3	0.3	0.3	0.3	0.3
Moorings Winch LO Storage	T65105	100%	0.900	0.3	0.3	0.3	0.3	0.3
Moorings Winch LO Storage	T65106	100%	0.900	0.3	0.3	0.3	0.3	0.3
Moorings Winch LO Storage	T65107	100%	0.900	0.3	0.3	0.3	0.3	0.3
Em. Gen. LO Storage	T65108	100%	0.900	0.3	0.3	0.3	0.3	0.3
WI Room LO Storage	T65109	100%	0.900	0.3	0.3	0.3	0.3	0.3
WI Room LO Storage	T65110	100%	0.900	0.3	0.3	0.3	0.3	0.3
Turbine Lube Oil Console 'C'	T65111	100%	0.900	0.8	0.8	0.8	0.8	0.8
Turbine Lube Oil Console 'B'	UQ-122303	0%	0.900	0.0	0.0	0.0	0.0	0.0
Turbine Lube Oil Console 'A'	UQ-122306	0%	0.900	0.0	0.0	0.0	0.0	0.0
Lub Oils	UQ-122304	0%	0.900	0.0	0.0	0.0	0.0	0.0
Water Tanks	ID	%	Density	Weight	CG	LCG	TCG	VCG
LL Ring Drain Tank	P	10%	1.000	0.5	0.5	0.5	0.5	0.5
LL Ring Drain Tank	S	10%	1.000	0.5	0.5	0.5	0.5	0.5
Generator Tower (Port)	C-51001	0%	1.000	0.0	0.0	0.0	0.0	0.0
Generator Tower (Starb)	C-52001	0%	1.000	0.0	0.0	0.0	0.0	0.0
Column Separator Tank	GE-514001	0%	1.000	0.0	0.0	0.0	0.0	0.0
Column Separator Tank	N1P	100%	0.870	1.0	1.0	1.0	1.0	1.0
Column Separator Tank	N1S	0%	1.000	0.0	0.0	0.0	0.0	0.0
Miscellaneous Tanks	0	0%	1.000	0.0	0.0	0.0	0.0	0.0
Structural Tanks	ID	%	Density	Weight	CG	LCG	TCG	VCG
clm p-tk	T05001A	0%	1.316	0.0	0.0	0.0	0.0	0.0
clm p-tk	T05001B	0%	1.316	0.0	0.0	0.0	0.0	0.0
clm p-tk	T05001A	0%	1.316	0.0	0.0	0.0	0.0	0.0
clm p-tk	T05001B	0%	1.316	0.0	0.0	0.0	0.0	0.0
Fuel Refuel	A58001	100%	1.000	7.9	7.9	7.9	7.9	7.9
Fuel Disp	A58002	100%	1.000	0.1	0.1	0.1	0.1	0.1
Generator DO Day Tank	T59305	100%	0.870	0.2	0.2	0.2	0.2	0.2
Chem Dosing Tank	T55101	100%	1.000	2.0	2.0	2.0	2.0	2.0
Cooling Expansion Tank	T55102	100%	1.000	0.5	0.5	0.5	0.5	0.5
Water Separators	V-66201/V-66202	100%	0.900	1.4	1.4	1.4	1.4	1.4
Oil Sump Tank	TQ-123301	0%	1.080	0.0	0.0	0.0	0.0	0.0
Top Sump Tank	V-533605	0%	1.000	0.0	0.0	0.0	0.0	0.0
Structural Tanks	0	0%	1.000	12.1	12.1	12.1	12.1	12.1



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DE C. R. L. S. M. O. T. E. S. P. T. C.
DIRET. F. E. S. P. T. C.
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**7.2 BALLASTING FROM DRAFT = 11.0M "TRANSIT CONDITION" TO DRAFT 18.0M
"TRANSIT SURVIVAL CONDITION"**

Loading Conditions attached:

Description	Draft	Comments
Stage 1 – Standard Transit Condition	11.00m	
Stage 2	11.74m	
Stage 3	12.10m	
Stage 4	12.80m	
Stage 5	15.90m	
Stage 6	18.00m	

É Cópia Fiel do Documento Original
JOSE CARLOS PIMENTEL
DIRECTOR
12/06/2013

Petrobras 36 - Roncador Field
Operations Manual - Volume
Summary of Ballast Sequence



NOBLE
DENTON

STAGE	TANK TO FILL	% FULL	CONDITION ON COMPLETION			
			Mean Draft idships (m)	Mean Draft Fwd (m)	Heel About CL (m)	Trim About Aft Perp. (m)
Transit Condition Stage 1	1P	99%				
	1S	99%				
	4S	21%				
	7P	87%				
	7S	99%				
Stage 2	11P	99%				
	11S	99%				
	13P	99%				
	13S	99%				
Stage 3	4P	37%	900	15.900	0.000	0.000
	4S	55%				
	20P	47%				
	20S	49%				
Stage 4	4P	84%				
	4S	98%				
	20P	93%				
	20S	99%				
			30	18.000	0.000	0.000

Notes:

1. SW Density assumed 1.025
2. Correction at end of sequence to be
3. -ve trim is trim by the stern

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JOSE CARLOS PEREIRA ALVES
DIRETOR
DE OPERAÇÕES



NOBLE
DENTON

Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	TCG m from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	-3.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	-1.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	-6.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	-9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	1.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	-0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	0.0	0.0	-	-
SW Ballast 11P	644.7	1.025	0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	0.0	0.0	-	-
SW Ballast 13S	644.7	1.025	0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	0.0	0.0	-	-
SW Ballast 16S	249.7	1.025	0.0	12.2	0.000	0.000
SW Ballast 17P	523.9	1.025	0.0	0.0	-	-
SW Ballast 17S	523.9	1.025	2.53	5.39	0.007	0.071
SW Ballast 18P	555.2	1.025	-0.02	26.99	0.010	0.072
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

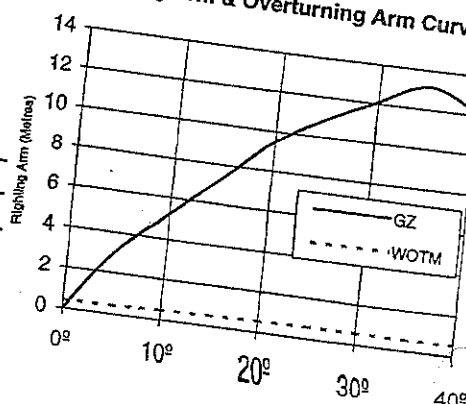
Statical Stability

Corrected VCG =	27.00 m	27.06 m
ΔMT / KML =	70.50 m	109.20 m
ΔMT / GML =	43.50 m	82.14 m

Stability Margin

Allowable VCG =	44.90 m
Stability Margin =	17.84 m

Righting Arm & Overturning Arm Curve



Prepared	BY
Checked	

L:IRONCADORICALCSOPS_TAMAM0721BALL_1\LOADCOND.

É CÓPIA FEL DO DOCUMENTO ORIGINAL

MA-3010.38-1320-915

ROSE CARLOS FREITAS / 01/10



[illegible]

Fuel Oil	ID	%	Density	Weight	ing Forces	ID	Tension	Weight	LCG	TCG	VCG
FO Tank	10P	0%	0.960	0.0	5 Vinch 9)	S1	0	0.0	24.63	38.00	18.29
FO Tank	10S	0%	0.960	0.0	5 Vinch 10)	S2	0	0.0	28.19	38.00	18.29
FO Tank	12P	0%	0.960	0.0	6 Vinch 11)	S3	0	0.0	31.75	38.00	18.29
FO Tank	12S	0%	0.960	0.0	6 Vinch 12)	S4	0	0.0	35.31	38.00	18.29
FO Overflow	P	50%	0.960	8.2	6 Vinch 13)	S5	0	0.0	81.02	38.00	18.29
FO Overflow	S	50%	0.960	7.6	7 Vinch 14)	S6	0	0.0	84.58	38.00	18.29
Fuel Oil	0			15.8	7 Vinch 15)	S7	0	0.0	88.14	38.00	18.29
					7 Vinch 16)	S8	0	0.0	91.70	38.00	18.29
	ID	%	Density	Weight	ing Forces	P1	0	0.0	24.63	-38.00	18.29
XO Sludge	N1P	0%	0.870	0.0	7 Vinch 7)	P2	0	0.0	28.19	-38.00	18.29
XO Settle	N1S	0%	0.870	0.0	6 Vinch 6)	P3	0	0.0	31.75	-38.00	18.29
XO Day Tk	N1P	100%	0.870	105.3	7 Vinch 5)	P4	0	0.0	35.31	-38.00	18.29
XO Day Tk	N2P	100%	0.870	110.6	7 Vinch 4)	P5	0	0.0	81.02	-38.00	18.29
XO Settl	N3S	100%	0.870	73.5	7 Vinch 3)	P6	0	0.0	84.58	-38.00	18.29
XO Service	N4S	100%	0.870	73.5	6 Vinch 2)	P7	0	0.0	88.14	-38.00	18.29
	0	100%	0.870	11.2	7 Vinch 1)	P8	0	0.0	91.70	-38.00	18.29
Liesel Oil	0				ing Forces	0					

Fuel Oil		100%	0.870	11.2	Forces	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																																																																																																																																																																																																																																																															
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<table border="1"> <thead> <tr> <th colspan="5">ub Oils</th> <th colspan="5">@TT</th> <th colspan="5"></th> </tr> <tr> <th></th> <th>ID</th> <th>%</th> <th>Density</th> <th>Weight</th> <th></th> <th>ID</th> <th>%</th> <th>Weight</th> <th>LCG</th> <th>TCG</th> <th>VCG</th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>rains Storage Tank Port</td> <td>N1P</td> <td>0%</td> <td>0.900</td> <td>0.0</td> <td>rd</td> <td>TT-01</td> <td>10%</td> <td>0.8</td> <td>63.51</td> <td>9.85</td> <td>37.88</td> <td></td> <td></td> <td></td> </tr> <tr> <td>rains Storage Tank Stbd</td> <td>N1S</td> <td>0%</td> <td>0.900</td> <td>0.0</td> <td>rd</td> <td>TT-02</td> <td>10%</td> <td>0.8</td> <td>49.26</td> <td>9.85</td> <td>37.88</td> <td></td> <td></td> <td></td> </tr> <tr> <td>aste Oil</td> <td>N1P</td> <td>10%</td> <td>1.000</td> <td>1.9</td> <td>rd</td> <td>TT-03</td> <td>10%</td> <td>4.2</td> <td>88.40</td> <td>-31.10</td> <td>37.88</td> <td></td> <td></td> <td></td> </tr> <tr> <td>aste Oil</td> <td>N1S</td> <td>10%</td> <td>1.000</td> <td>1.9</td> <td>rd</td> <td>TT-04</td> <td>10%</td> <td>3.1</td> <td>81.40</td> <td>-32.18</td> <td>37.88</td> <td></td> <td></td> <td></td> </tr> <tr> <td>r Compressors LO Storage</td> <td>T65101</td> <td>100%</td> <td>0.900</td> <td>0.8</td> <td>rd</td> <td>TT-05</td> <td>10%</td> <td>10.0</td> <td>85.97</td> <td>-23.86</td> <td>37.58</td> <td></td> <td></td> <td></td> </tr> <tr> <td>oring Winch LO Storage</td> <td>T65105</td> <td>100%</td> <td>0.900</td> <td>0.3</td> <td>rd</td> <td>TT-06</td> <td>10%</td> <td>5.1</td> <td>88.61</td> <td>24.15</td> <td>37.58</td> <td></td> <td></td> <td></td> </tr> <tr> <td>oring Winch LO Storage</td> <td>T65106</td> <td>100%</td> <td>0.900</td> <td>0.3</td> <td>rd</td> <td>TT-07</td> <td>10%</td> <td>5.2</td> <td>80.51</td> <td>24.00</td> <td>37.58</td> <td></td> <td></td> <td></td> </tr> <tr> <td>oring Winch LO Storage</td> <td>T65107</td> <td>100%</td> <td>0.900</td> <td>0.3</td> <td>rd</td> <td>TT-08</td> <td>5%</td> <td>4.1</td> <td>82.90</td> <td>31.44</td> <td>37.88</td> <td></td> <td></td> <td></td> </tr> <tr> <td>n. Gen. LO Storage</td> <td>T65108</td> <td>100%</td> <td>0.900</td> <td>0.3</td> <td>rd</td> <td>TT-09</td> <td>5%</td> <td>3.0</td> <td>69.19</td> <td>-5.33</td> <td>37.88</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Room LO Storage</td> <td>T65109</td> <td>100%</td> <td>0.900</td> <td>0.5</td> <td>rd</td> <td>TT-10</td> <td>10%</td> <td>3.3</td> <td>75.27</td> <td>-8.16</td> <td>37.78</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Room LO Storage</td> <td>T65110</td> <td>100%</td> <td>0.900</td> <td>0.8</td> <td>rd</td> <td>TT-11</td> <td>10%</td> <td>4.4</td> <td>75.27</td> <td>-1.02</td> <td>37.78</td> <td></td> <td></td> <td></td> </tr> <tr> <td>bine Lube Oil Console 'C'</td> <td>T65111</td> <td>100%</td> <td>0.900</td> <td>0.8</td> <td>rd</td> <td>TT-12</td> <td>10%</td> <td>3.1</td> <td>75.37</td> <td>4.83</td> <td>37.68</td> <td></td> <td></td> <td></td> </tr> <tr> <td>bine Lube Oil Console 'B'</td> <td>UQ-122308</td> <td>0%</td> <td>0.900</td> <td>0.0</td> <td>rd</td> <td>TT-13</td> <td>10%</td> <td>0.6</td> <td>61.89</td> <td>-2.75</td> <td>37.58</td> <td></td> <td></td> <td></td> </tr> <tr> <td>bine Lube Oil Console 'A'</td> <td>UQ-122306</td> <td>0%</td> <td>0.900</td> <td>0.0</td> <td>rd</td> <td>TT-14</td> <td>10%</td> <td>2.0</td> <td>37.67</td> <td>22.62</td> <td>37.58</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>UQ-122304</td> <td>0%</td> <td>0.900</td> <td>0.0</td> <td>rd</td> <td>TT-15</td> <td>10%</td> <td>6.1</td> <td>73.19</td> <td>23.30</td> <td>37.58</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>															ub Oils					@TT											ID	%	Density	Weight		ID	%	Weight	LCG	TCG	VCG				rains Storage Tank Port	N1P	0%	0.900	0.0	rd	TT-01	10%	0.8	63.51	9.85	37.88				rains Storage Tank Stbd	N1S	0%	0.900	0.0	rd	TT-02	10%	0.8	49.26	9.85	37.88				aste Oil	N1P	10%	1.000	1.9	rd	TT-03	10%	4.2	88.40	-31.10	37.88				aste Oil	N1S	10%	1.000	1.9	rd	TT-04	10%	3.1	81.40	-32.18	37.88				r Compressors LO Storage	T65101	100%	0.900	0.8	rd	TT-05	10%	10.0	85.97	-23.86	37.58				oring Winch LO Storage	T65105	100%	0.900	0.3	rd	TT-06	10%	5.1	88.61	24.15	37.58				oring Winch LO Storage	T65106	100%	0.900	0.3	rd	TT-07	10%	5.2	80.51	24.00	37.58				oring Winch LO Storage	T65107	100%	0.900	0.3	rd	TT-08	5%	4.1	82.90	31.44	37.88				n. Gen. LO Storage	T65108	100%	0.900	0.3	rd	TT-09	5%	3.0	69.19	-5.33	37.88				Room LO Storage	T65109	100%	0.900	0.5	rd	TT-10	10%	3.3	75.27	-8.16	37.78				Room LO Storage	T65110	100%	0.900	0.8	rd	TT-11	10%	4.4	75.27	-1.02	37.78				bine Lube Oil Console 'C'	T65111	100%	0.900	0.8	rd	TT-12	10%	3.1	75.37	4.83	37.68				bine Lube Oil Console 'B'	UQ-122308	0%	0.900	0.0	rd	TT-13	10%	0.6	61.89	-2.75	37.58				bine Lube Oil Console 'A'	UQ-122306	0%	0.900	0.0	rd	TT-14	10%	2.0	37.67	22.62	37.58					UQ-122304	0%	0.900	0.0	rd	TT-15	10%	6.1	73.19	23.30	37.58			
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	UQ-122304	0%	0.900	0.0	rd	TT-15	10%	6.1	73.19	23.30	37.58																																																																																																																																																																																																																																																																		
0		7.9			0		55.8		78.24		1.41		37.70																																																																																																																																																																																																																																																																

Process Tanks					7.9	55.8	78.24	1.41	37.70		
Drain Tank	ID	%	Density	Weight	@ MD	ID	%	Weight	LCG	TCG	VCG
Drain Tank	P	10%	1.000	0.5	Jent Storage	MD-01	5%	1.4	65.89	8.51	43.87
Drain Tank	S	10%	1.000	0.5		MD-02	5%	1.4	48.89	8.51	43.87
Drain Tank	P	0%	1.000	0.0		MD-03	10%	4.6	48.89	8.51	43.87
erator Tower (Port)	S	0%	1.000	0.0	@ MD	0		7.4	52.10	8.51	43.87
erator Tower (Starb)	C-51001	0%	1.000	0.0	Laydown Areas						
iliary Generator DO	C-52001	0%	1.000	0.0							
olumn Separator Tank	GE-514001	100%	0.870	1.0							

					Down	HD	0%	LCG	TCG	VCG	
					1	LD-01	0%	0.0	21.10	-35.80	48.90
						LD-02	40%	30.4	37.14	10.07	43.00
						LD-03	40%	30.0	38.55	-3.52	43.00
						LD-04	50%	21.3	39.27	-11.28	43.00
						LD-05	50%	29.6	95.42	0.43	43.00
						LD-06	50%	28.3	95.44	15.43	43.00
						LD-07	0%	31.9	95.44	30.80	43.00
						LD-08	0%	0.0	73.34	-5.46	43.00
						LD-09	0%	0.0	73.34	9.54	43.00
						LD-10	0%	0.0	73.34	24.54	43.00
						LD-11	60%	127.2	106.05	-19.00	36.58
								30.37	1.29		43.00
										</	

Items	ID	Weight	LCG	TCG	YCG
	0	36.0	35.31	0.00	12.20
	0	0.0	0.00	0.00	0.00
	0	0.0	0.00	0.00	0.00
	0	0.0	0.00	0.00	0.00
	0	0.0	0.00	0.00	0.00
	0	0.0	0.00	0.00	0.00



Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	TCG m from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	-3.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	-1.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	-6.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	-9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	1.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	-0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	0.0	0.0	-	-
SW Ballast 11P	644.7	1.025	0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	0.0	0.0	-	-
SW Ballast 13S	644.7	1.025	0.0	12.2	0.000	0.000
SW Ballast 16P	249.7	1.025	0.0	0.0	-	-
SW Ballast 16S	249.7	1.025	1.4	5.01	0.006	0.066
SW Ballast 17P	523.9	1.025	-0.019	25.52	0.009	0.068
SW Ballast 17S	523.9	1.025				
SW Ballast 18P	555.2	1.025				
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

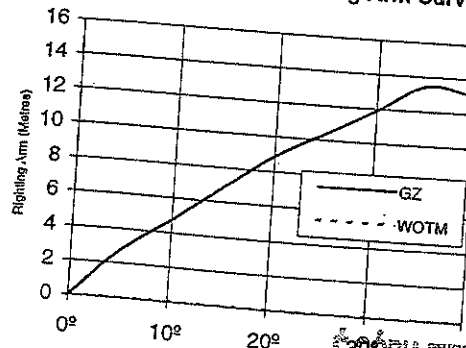
Static Stability

Corrected VCG =	25.53 m	25.59 m
KMT / KML =	67.60 m	105.20 m
GMT / GML =	42.07 m	79.61 m

Stability Margin

Allowable VCG =	67.30 m
Stability Margin =	41.71 m

Righting Arm & Overturning Arm Curve



Prepared	BY
Checked	

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NOBLE
DENTON

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Sea Water Ballast Tanks	Max Vol. m³	Density t/m³
SW Ballast 1P	886.7	1.025
SW Ballast 1S	886.7	1.025
SW Ballast 2P	877.6	1.025
SW Ballast 2S	877.6	1.025
SW Ballast 3P	728.7	1.025
SW Ballast 3S	728.7	1.025
SW Ballast 4P	798.3	1.025
SW Ballast 4S	798.3	1.025
SW Ballast 5P	256.6	1.025
SW Ballast 5S	256.6	1.025
SW Ballast 6P	523.9	1.025
SW Ballast 6S	523.9	1.025
SW Ballast 7P	555.2	1.025
SW Ballast 7S	555.2	1.025
SW Ballast 11P	644.7	1.025
SW Ballast 11S	644.7	1.025
SW Ballast 13P	644.7	1.025
SW Ballast 13S	644.7	1.025
SW Ballast 16P	249.7	1.025
SW Ballast 16S	249.7	1.025
SW Ballast 17P	523.9	1.025
SW Ballast 17S	523.9	1.025
SW Ballast 18P	555.2	1.025
SW Ballast 18S	555.2	1.025
SW Ballast 19P	728.8	1.025
SW Ballast 19S	728.8	1.025
SW Ballast 20P	768.2	1.025
SW Ballast 20S	768.2	1.025
SW Ballast 21P	963.7	1.025
SW Ballast 21S	963.7	1.025
SW Ballast 22P	1067.3	1.025
SW Ballast 22S	1067.3	1.025
SW Ballast 23P	665.6	1.025
SW Ballast 23S	665.6	1.025
SW Ballast 24P	980.8	1.025
SW Ballast 24S	980.8	1.025
SW Ballast 25P	665.6	1.025
SW Ballast 25S	665.6	1.025
SW Ballast 26P	980.8	1.025
SW Ballast 26S	980.8	1.025
SW Ballast Total		

TCG m from CL	VCG m	FSC _T m	FSC _L m
-0.3	29.7	0.000	0.000
0.0	0.0	0.000	0.000
0.2	26.4	0.000	0.000
1.7	35.4	0.001	0.000
-3.6	39.1	0.001	0.000
-1.6	24.3	0.000	0.000
-6.1	25.8	0.000	0.001
-9.0	44.2	0.000	0.000
1.4	37.7	0.000	0.000
-0.6	41.1	0.000	0.000
8.5	43.9	0.000	0.000
5.2	43.0	0.000	0.000
0.0	0.0	0.001	0.000
0.0	0.0	-	-
0.0	9.8	-	-
0.0	0.0	-	-
0.0	12.2	0.000	0.000
0.0	0.0	-	-
1.1	4.40	0.014	0.160
-0.020	24.75	0.017	0.161

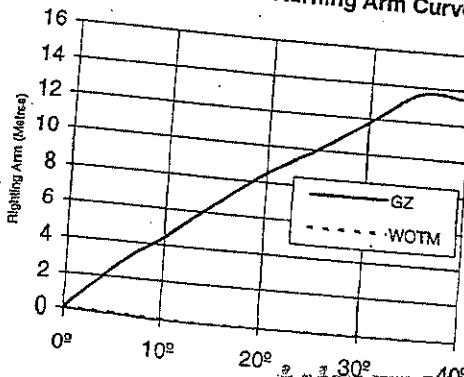
Static Stability

Corrected VCG =	24.77 m	24.91 m
GMT / KML =	65.80 m	102.30 m
GMT / GML =	41.03 m	77.39 m

Stability Margin

Allowable VCG =	65.50 m
Stability Margin =	40.59 m

Righting Arm & Overturning Arm Curve

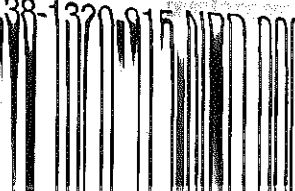


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Sea Water Ballast Tanks	Max Vol. m³	Densi t/m³	TCG m from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	-3.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	-1.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	-6.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	-9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	1.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	-0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	0.0	0.0	-	-
SW Ballast 11P	644.7	1.025	0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	0.0	12.2	0.000	0.000
SW Ballast 13S	644.7	1.025	0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	0.9	5.27	0.011	0.126
SW Ballast 16S	249.7	1.025	-0.020	24.22	0.014	0.127
SW Ballast 17P	523.9	1.025				
SW Ballast 17S	523.9	1.025				
SW Ballast 18P	555.2	1.025				
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

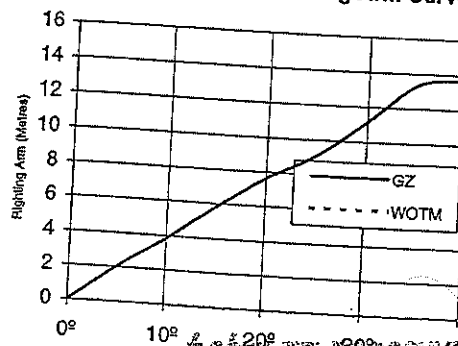
Statical Stability

Corrected VCG =	24.23 m	24.35 m
KMT / KML =	28.60 m	33.80 m
GMT / GML =	4.37 m	9.45 m

Stability Margin

Allowable VCG =	28.30 m
Stability Margin =	3.95 m

Righting Arm & Overturning Arm Curve



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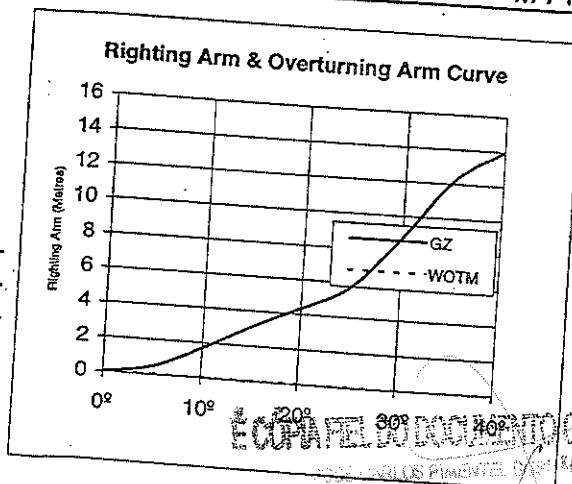
Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	TCG m from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025				
SW Ballast 1S	886.7	1.025	-0.3	29.7	0.000	0.000
SW Ballast 2P	877.6	1.025	0.0	0.0	0.000	0.000
SW Ballast 2S	877.6	1.025	0.2	26.4	0.000	0.000
SW Ballast 3P	728.7	1.025	1.7	35.4	0.001	0.000
SW Ballast 3S	728.7	1.025	-3.6	39.1	0.001	0.000
SW Ballast 4P	798.3	1.025	-1.6	24.3	0.000	0.000
SW Ballast 4S	798.3	1.025	-6.1	25.8	0.000	0.001
SW Ballast 5P	256.6	1.025	-9.0	44.2	0.000	0.000
SW Ballast 5S	256.6	1.025	1.4	37.7	0.000	0.000
SW Ballast 6P	523.9	1.025	-0.6	41.1	0.000	0.000
SW Ballast 6S	523.9	1.025	8.5	43.9	0.000	0.000
SW Ballast 7P	555.2	1.025	5.2	43.0	0.000	0.000
SW Ballast 7S	555.2	1.025	0.0	0.0	0.001	0.000
SW Ballast 11P	644.7	1.025	0.0	0.0	-	-
SW Ballast 11S	644.7	1.025	0.0	9.8	-	-
SW Ballast 13P	644.7	1.025	0.0	0.0	-	-
SW Ballast 13S	644.7	1.025	0.0	12.2	0.000	0.000
SW Ballast 16P	249.7	1.025	0.0	0.0	-	-
SW Ballast 16S	249.7	1.025	0.6	5.43	0.020	0.175
SW Ballast 17P	523.9	1.025				
SW Ballast 17S	523.9	1.025	-0.022	22.36	0.023	0.176
SW Ballast 18P	555.2	1.025				
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

Statical Stability

Corrected VCG =	22.38 m	22.53 m
KMT / KML =	27.60 m	28.20 m
GMT / GML =	5.22 m	5.67 m

Stability Margin

Allowable VCG =	27.30 m
Stability Margin =	4.77 m



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Sea Water Ballast Tanks	Max Vol. m ³	Density t/m ³	TCG m from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	-3.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	-1.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	-6.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	-9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	1.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	-0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	0.0	0.0	-	-
SW Ballast 11P	644.7	1.025	0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	0.0	12.2	0.000	0.000
SW Ballast 13S	644.7	1.025	0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	0.5	5.54	0.020	0.086
SW Ballast 16S	249.7	1.025	-0.023	21.33	0.022	0.087
SW Ballast 17P	523.9	1.025				
SW Ballast 17S	523.9	1.025				
SW Ballast 18P	555.2	1.025				
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

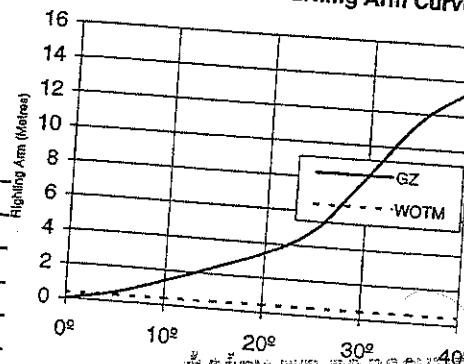
Stability Margin

Corrected VCG =	21.36 m	21.42 m
MT / KML =	27.60 m	28.10 m
MT / GML =	6.24 m	6.68 m

Stability Margin

Allowable VCG =	25.23 m
Stability Margin =	3.81 m

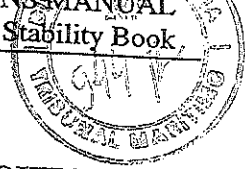
Righting Arm & Overturning Arm Curve



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7.3 BALLASTING FROM DRAFT = 11.0M "ON SITE TRANSIT CONDITION" TO DRAFT = 18.0M "PRE-MOORING INSTALLATION CONDITION"

Loading Conditions attached:

Description	Draft	Comments
Stage 1 – Standard Transit Condition	11.00m	
Stage 2	11.74m	
Stage 3	12.10m	
Stage 4	12.80m	
Stage 5	15.90m	
Stage 6	18.00m	

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JOSE CARLOS PIMENTEL DA SILVA
DIRETOR
DEPARTAMENTO DE ESTUDOS E PROJETOS

Petrobras 36 - Roncador Field
Operations Manual - Volume 7
Summary of Ballast Sequence



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STAGE	TANK TO FILL	% FULL	CONDITION ON COMPLETION			
			n Draft dships (m)	Mean Draft Fwd (m)	Heel About CL (m)	Trim About Aft Perp. (m)
Transit Condition Stage 1	1P	99%	856	15.723	-0.005	-0.266
	1S	99%				
	4S	22%				
	7P	88%				
	7S	99%				
	11P	3%				
Stage 2	11S	99%				
	13P	99%				
	13S	99%				
Stage 3	4P	46%				
	4S	49%				
	20P	40%				
	20S	58%				
Stage 4	4P	99%	000	18.000	0.000	0.000
	4S	99%				
	20P	99%				
	20S	99%				

, 21P, 21S for level trim

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DIRETOR



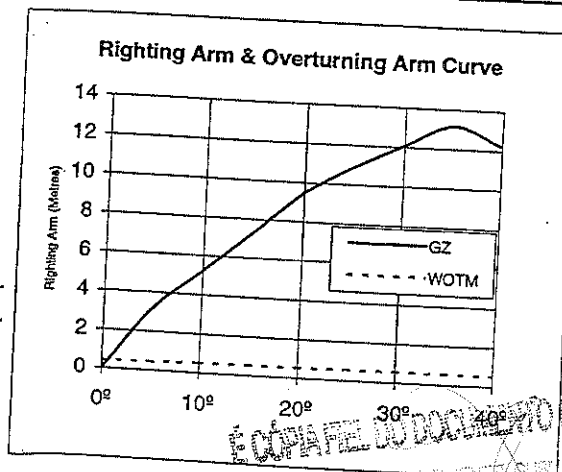
Sea Water Ballast Tanks	Max Vol. m ³	Density t/m ³	TCG m from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	-3.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	-1.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	-6.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	-9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	1.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	-0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	0.0	0.0	-	-
SW Ballast 11P	644.7	1.025	0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	2.51	5.38	0.011	0.071
SW Ballast 16S	249.7	1.025	-0.02	26.98	0.014	0.072
SW Ballast 17P	523.9	1.025				
SW Ballast 17S	523.9	1.025				
SW Ballast 18P	555.2	1.025				
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

Statcal Stability

Corrected VCG =	26.99 m	27.05 m
KMT / KML =	70.50 m	109.20 m
GMT / GML =	43.51 m	82.15 m

Stability Margin

Allowable VCG =	44.90 m
Stability Margin =	17.85 m



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Drill Water Tanks	ID	%	Density	Weight	Drill Water Tanks	ID	Chain	Weight	LCG	TCG	VCG
Drill Water Tanks	8P	0%	1.000	0.0	Drill Water Tanks	1aP	450	85.3	87.52	-30.50	4.60
Drill Water Tanks	8S	0%	1.000	0.0	Drill Water Tanks	1bP	450	85.3	81.65	-30.50	4.60
Drill Water Tanks	9P	0%	1.000	0.0	Drill Water Tanks	5P	450	85.3	86.47	-31.12	16.19
Drill Water Tanks	9S	0%	1.000	0.0	Drill Water Tanks	9P	450	85.3	91.05	-33.48	13.72
Drill Water Tanks	14P	0%	1.000	0.0	Drill Water Tanks	2aP	450	85.3	31.13	-30.50	4.60
Drill Water Tanks	14S	0%	1.000	0.0	Drill Water Tanks	2bP	450	85.3	25.26	-30.50	4.60
Drill Water Tanks	15P	0%	1.000	0.0	Drill Water Tanks	6P	450	85.3	26.31	-31.12	16.19
Drill Water Tanks	15S	0%	1.000	0.0	Drill Water Tanks	10P	450	85.3	21.73	-33.48	13.72
Drill Water Tanks (Process FW)	0			0.0	Drill Water Tanks	4aS	450	85.3	81.65	30.50	4.60
Potable Water					Drill Water Tanks	4bS	450	85.3	87.52	30.50	4.60
Pot Water Tk	1P	100%	1.000	193.8	Drill Water Tanks	8S	450	85.3	86.47	31.12	16.19
Pot Water Tk	1S	100%	1.000	193.8	Drill Water Tanks	12S	450	85.3	91.05	33.48	13.72
Pot Water Day Tk	0	100%	1.000	15.2	Drill Water Tanks	3aS	450	85.3	25.26	30.50	4.60
Potable Water	0			402.7	Drill Water Tanks	3bS	450	85.3	31.13	30.50	4.60
					Drill Water Tanks	7S	450	85.3	26.31	31.12	16.19
					Drill Water Tanks	11S	450	85.3	21.73	33.48	13.72

Fuel Oil	ID	%	Density	Weight	Fuel Oil	ID	Tension	Weight	LCG	TCG	VCG
FO Tank	10P	0%	0.960	0.0	Fuel Oil	S1	0	0.0	24.63	38.00	18.29
FO Tank	10S	0%	0.960	0.0	Fuel Oil	S2	0	0.0	28.19	38.00	18.29
FO Tank	12P	0%	0.960	0.0	Fuel Oil	S3	0	0.0	31.75	38.00	18.29
FO Tank	12S	0%	0.960	0.0	Fuel Oil	S4	0	0.0	35.31	38.00	18.29
FO Overflow	P	50%	0.960	8.2	Fuel Oil	S5	0	0.0	81.02	38.00	18.29
FO Overflow	S	50%	0.960	7.6	Fuel Oil	S6	0	0.0	84.58	38.00	18.29
Fuel Oil	0			15.8	Fuel Oil	S7	0	0.0	88.14	38.00	18.29
Sludge	N1P	0%	0.870	0.0	Fuel Oil	S8	0	0.0	91.70	38.00	18.29
DO Settle	N1S	0%	0.870	0.0	Fuel Oil	P1	0	0.0	24.63	-38.00	18.29
DO Day Tk	N1P	100%	0.870	105.3	Fuel Oil	P2	0	0.0	28.19	-38.00	18.29
DO Day Tk	N2P	100%	0.870	110.6	Fuel Oil	P3	0	0.0	31.75	-38.00	18.29
DO Settle	N3S	100%	0.870	73.5	Fuel Oil	P4	0	0.0	35.31	-38.00	18.29
DO Service	N4S	100%	0.870	73.5	Fuel Oil	P5	0	0.0	81.02	-38.00	18.29
Diesel Oil	0			374.0	Fuel Oil	P6	0	0.0	84.58	-38.00	18.29
					Fuel Oil	P7	0	0.0	88.14	-38.00	18.29
					Fuel Oil	P8	0	0.0	91.70	-38.00	18.29

Lub Oils	ID	%	Density	Weight	Lub Oils	ID	%	Weight	LCG	TCG	VCG
Drains Storage Tank Port	N1P	0%	0.900	0.0	Lub Oils	TT-01	10%	0.8	53.53	9.85	37.88
Drains Storage Tank Stbd	N1S	0%	0.900	0.0	Lub Oils	TT-02	10%	0.8	49.26	9.85	37.88
Waste Oil	N1P	10%	1.000	1.9	Lub Oils	TT-03	10%	4.2	88.40	-31.10	37.88
Waste Oil	N1S	10%	1.000	1.9	Lub Oils	TT-04	10%	3.1	81.40	-32.18	37.88
Air Compressors LO Storage	T65101	100%	0.900	0.8	Lub Oils	TT-05	10%	10.0	85.97	-23.86	37.58
Mooring Winch LO Storage	T65105	100%	0.900	0.3	Lub Oils	TT-06	10%	5.1	86.61	24.15	37.58
Mooring Winch LO Storage	T65106	100%	0.900	0.3	Lub Oils	TT-07	10%	5.2	80.51	24.00	37.58
Mooring Winch LO Storage	T65107	100%	0.900	0.3	Lub Oils	TT-08	5%	4.1	82.90	31.44	37.88
Mooring Winch LO Storage	T65108	100%	0.900	0.3	Lub Oils	TT-09	5%	3.0	69.19	-5.33	37.88
Em. Gen. LO Storage	T65109	100%	0.900	0.5	Lub Oils	TT-10	10%	3.3	75.27	-8.16	37.78
WI Room LO Storage	T65110	100%	0.900	0.5	Lub Oils	TT-11	10%	4.4	75.27	-1.02	37.78
WI Room LO Storage	T65111	100%	0.900	0.8	Lub Oils	TT-12	10%	3.1	75.37	4.83	37.68
Turbine Lube Oil Console 'C'	UQ-122308	0%	0.900	0.0	Lub Oils	TT-13	10%	0.6	61.89	-2.75	37.58
Turbine Lube Oil Console 'B'	UQ-122306	0%	0.900	0.0	Lub Oils	TT-14	10%	2.0	37.67	22.62	37.58
Turbine Lube Oil Console 'A'	UQ-122304	0%	0.900	0.0	Lub Oils	TT-15	10%	6.1	73.19	23.30	37.58
Lub Oils	0			7.9	Lub Oils	0			55.8	78.24	1.41

Miscellaneous Tanks	ID	%	Density	Weight	Miscellaneous Tanks	ID	%	Weight	LCG	TCG	VCG
Bludge Tank	P	10%	1.000	0.5	Miscellaneous Tanks	MD-01	5%	1.4	65.89	8.51	43.87
W.I.L. ring Drain Tank	S	10%	1.000	0.5	Miscellaneous Tanks	MD-02	5%	1.4	48.89	8.51	43.87
W.I.L. ring Drain Tank	P	0%	1.000	0.0	Miscellaneous Tanks	MD-03	10%	4.6	48.89	8.51	43.87
W.I.L. ring Drain Tank	S	0%	1.000	0.0	Miscellaneous Tanks	0			7.4	52.10	8.51
Deaerator Tower (Port)	C-51001	0%	1.000	0.0							
Deaerator Tower (Starb)	C-52001	0%	1.000	0.0							
Auxiliary Generator DO	GE-514001	100%	0.870	1.0							
Air Column Separator Tank	N1P	0%	1.000	0.0							
Air Column Separator Tank	N1S	0%	1.000	0.0							

Non Structural Tanks	ID	%	Density	Weight	Non Structural Tanks	ID	%	Weight	LCG	TCG	VCG
Fwd clmn p-tk	T05001A	0%	1.316	0.0	Non Structural Tanks	LD-01	40%	30.4	37.14	10.07	43.00
Fwd clmn p-tk	T05001B	0%	1.316	0.0	Non Structural Tanks	LD-02	40%	30.0	38.55	-3.52	43.00
Fwd clmn p-tk	T05001A	0%	1.316	0.0	Non Structural Tanks	LD-03	40%	21.3	39.27	-11.28	43.00
Fwd clmn p-tk	T05001B	0%	1.316	0.0	Non Structural Tanks	LD-04	50%	29.6	95.42	0.43	43.00
Helifuel Refuel	A58001	100%	1.000	7.9	Non Structural Tanks	LD-05	50%	28.3	95.44	15.43	43.00
Helifuel Disp	A58002	100%	1.000	0.1	Non Structural Tanks	LD-06	50%	31.9	95.44	30.80	43.00
Incinerator DO Day Tank	T59305	100%	0.870	0.2	Non Structural Tanks	LD-07	0%	0.0	73.34	-5.46	43.00
FW Chem Dosing Tank	T55101	100%	1.000	2.0	Non Structural Tanks	LD-08	0%	0.0	73.34	9.54	43.00
FW Cooling Expansion Tank	T55102	100%	1.000	0.5	Non Structural Tanks	LD-09	0%	0.0	73.34	24.54	43.00
Oily Water Separators	V-66201/V-66202	100%	0.900	1.4	Non Structural Tanks	LD-10	0%	0.0	106.05	-19.00	36.58
Glycol Sump Tank	TQ-123301	0%	1.080	0.0	Non Structural Tanks	LD-11	60%	127.2	30.37	1.29	43.00
Tank Top Sump Tank	V-533605	0%	1.000	0.0	Laydown Areas	0			298.7	52.07	5.21
Non Structural Tanks	0			12.1	Non Structural Tanks	0			0.0	0.00	0.00

Units are as follows: Weight - metric tonnes, density - metric tonnes per



Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	TCG m from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	-3.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	-1.6	24.3	0.000	0.000
SW Ballast 4S	798.3	1.025	-6.1	25.8	0.000	0.001
SW Ballast 5P	256.6	1.025	-9.0	44.2	0.000	0.000
SW Ballast 5S	256.6	1.025	1.4	37.7	0.000	0.000
SW Ballast 6P	523.9	1.025	-0.6	41.1	0.000	0.000
SW Ballast 6S	523.9	1.025	8.5	43.9	0.000	0.000
SW Ballast 7P	555.2	1.025	5.2	43.0	0.000	0.000
SW Ballast 7S	555.2	1.025	0.0	0.0	0.001	0.000
SW Ballast 11P	644.7	1.025	0.0	0.0	-	-
SW Ballast 11S	644.7	1.025	0.0	9.8	-	-
SW Ballast 13P	644.7	1.025	0.0	0.0	-	-
SW Ballast 13S	644.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 16P	249.7	1.025	0.0	0.0	-	-
SW Ballast 16S	249.7	1.025	1.44	5.02	-0.005	0.051
SW Ballast 17P	523.9	1.025	-0.01	25.52	0.008	0.052
SW Ballast 17S	523.9	1.025				
SW Ballast 18P	555.2	1.025				
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

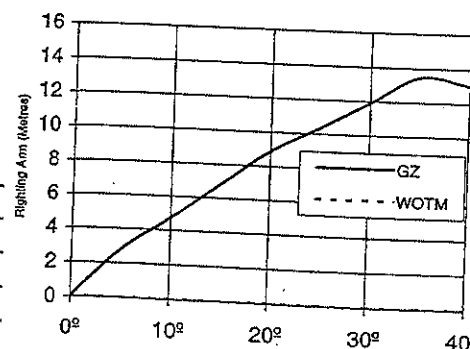
Static Stability

Corrected VCG =	25.53 m	25.58 m
GMT / KML =	67.60 m	105.20 m
GMT / GML =	42.07 m	79.62 m

Stability Margin

Allowable VCG =	67.30 m
Stability Margin =	41.72 m

Righting Arm & Overturning Arm Curve



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DIRETOR
DIVISÃO DE PROJETO



Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	TCG m from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	-3.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	-1.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	-6.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	-9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	1.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	-0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	0.0	0.0	-	-
SW Ballast 11P	644.7	1.025	0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	1.14	4.41	0.013	0.145
SW Ballast 16S	249.7	1.025	-0.02	24.75	0.015	0.147
SW Ballast 17P	523.9	1.025				
SW Ballast 17S	523.9	1.025				
SW Ballast 18P	555.2	1.025				
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

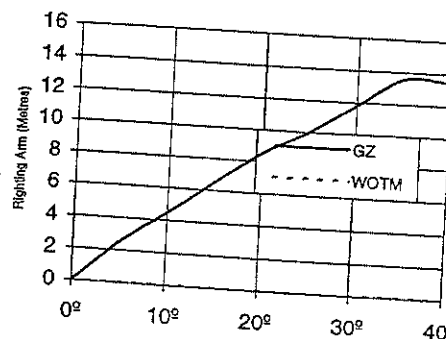
Statical Stability

Corrected VCG =	24.76 m	24.90 m
KMT / KML =	65.80 m	102.30 m
GMT / GML =	41.04 m	77.40 m

Stability Margin

Allowable VCG =	65.50 m
Stability Margin =	40.60 m

Righting Arm & Overturning Arm Curve



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JOSE CARLOS PACHECO
DIRECTOR
DIVISÃO DE PROJEÇÃO

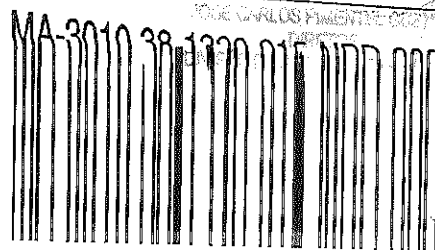
Statical Stability

Stability Margin

The graph displays the Righting Arm (Metres) on the Y-axis (0 to 16) against Heel (Degrees) on the X-axis (0° to 30°). Two curves are plotted: GZ (solid line) and WOTM (dashed line). The GZ curve starts at (0,0) and increases steadily, reaching approximately 11.5 metres at 30 degrees. The WOTM curve starts at (0,0) and increases more slowly than the GZ curve, reaching approximately 6.5 metres at 30 degrees.

Heel (Degrees)	GZ (Metres)	WOTM (Metres)
0°	0.0	0.0
10°	3.5	1.5
20°	7.0	3.0
30°	11.5	6.5

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Sea Water Ballast Tanks	Max Vol. m ³	Density t/m ³	TCG m from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	-3.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	-1.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	-6.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	-9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	1.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	-0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	0.0	0.0	-	-
SW Ballast 11P	644.7	1.025	0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	0.0	0.0	0.010	0.045
SW Ballast 16S	249.7	1.025	0.60	5.41	-	-
SW Ballast 17P	523.9	1.025	-0.023	22.368	0.012	0.046
SW Ballast 17S	523.9	1.025				
SW Ballast 18P	555.2	1.025				
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

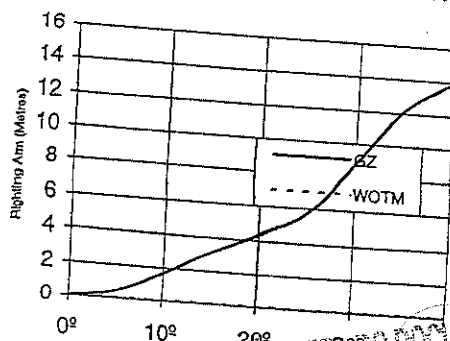
Stability

Corrected VCG =	22.38 m	22.41 m
MT / KML =	27.60 m	28.20 m
MT / GML =	5.22 m	5.79 m

Stability Margin

Allowable VCG =	27.30 m
Stability Margin =	4.89 m

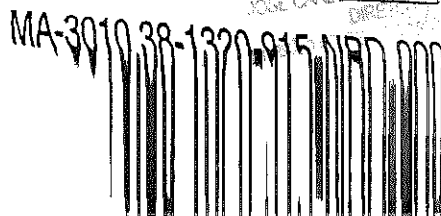
Righting Arm & Overturning Arm Curve



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Sea Water Ballast Tanks	Max Vol. m ³	Density t/m ³	TCG m from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	-3.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	-1.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	-6.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	-9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	1.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	-0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	0.0	0.0	-	-
SW Ballast 11P	644.7	1.025	0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	0.47	5.53	0.021	0.088
SW Ballast 16S	249.7	1.025	-0.023	21.324	0.024	0.089
SW Ballast 17P	523.9	1.025				
SW Ballast 17S	523.9	1.025				
SW Ballast 18P	555.2	1.025				
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

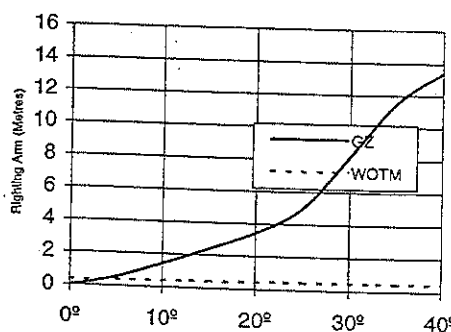
Statical Stability

Corrected VCG =	21.35 m	21.41 m
KMT / KML =	27.60 m	28.10 m
GMT / GML =	6.25 m	6.69 m

Stability Margin

Allowable VCG =	25.23 m
Stability Margin =	3.82 m

Righting Arm & Overturning Arm Curve

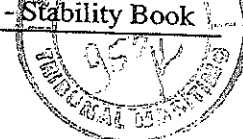


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7.4 BALLASTING FROM DRAFT = 18.0M "PRE-MOORING INSTALLATION CONDITION" TO DRAFT = 22.0M "POST MOORING INSTALLATION"

Subject to Mooring Installation Procedures to be defined by Installation Contractor

Loading Conditions attached:

Description	Draft	Comments
Pre-Mooring Condition	18.0m	
Four Lines Connected & Tensioned	18.0m	
Eight Lines Connected & Tensioned	18.0m	
Twelve Lines Connected & Tensioned	18.0m	
Sixteen Lines Connected & Tensioned	18.0m	
Ballast Down to Operating Draft	22.0m	

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DIRETOR
DIVISÃO DE SEGURANÇA



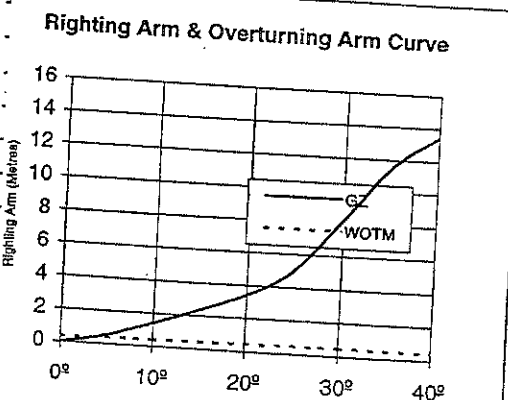
Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	TCG from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	9.0	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	9.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	9.0	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	9.0	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	9.0	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	9.0	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	9.0	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	2.0	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	2.0	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	1.8	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	1.5	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	9.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	9.0	0.0	-	-
SW Ballast 11P	644.7	1.025	9.0	9.8	-	-
SW Ballast 11S	644.7	1.025	9.0	0.0	-	-
SW Ballast 13P	644.7	1.025	9.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	9.0	0.0	-	-
SW Ballast 16P	249.7	1.025	10.47	5.53	0.021	0.088
SW Ballast 16S	249.7	1.025	1.0			
SW Ballast 17P	523.9	1.025	9.0	21.324	0.024	0.089
SW Ballast 17S	523.9	1.025	9.0			
SW Ballast 18P	555.2	1.025	9.0			
SW Ballast 18S	555.2	1.025	9.0			
SW Ballast 19P	728.8	1.025	9.0			
SW Ballast 19S	728.8	1.025	9.0			
SW Ballast 20P	768.2	1.025	9.0			
SW Ballast 20S	768.2	1.025	9.0			
SW Ballast 21P	963.7	1.025	9.0			
SW Ballast 21S	963.7	1.025	9.0			
SW Ballast 22P	1067.3	1.025	9.0			
SW Ballast 22S	1067.3	1.025	9.0			
SW Ballast 23P	665.6	1.025	9.0			
SW Ballast 23S	665.6	1.025	9.0			
SW Ballast 24P	980.8	1.025	9.0			
SW Ballast 24S	980.8	1.025	9.0			
SW Ballast 25P	665.6	1.025	9.0			
SW Ballast 25S	665.6	1.025	9.0			
SW Ballast 26P	980.8	1.025	9.0			
SW Ballast 26S	980.8	1.025	9.0			
SW Ballast Total						

Stability

Corrected VCG =	21.35 m	21.41 m
T / KML =	27.60 m	28.10 m
T / GML =	6.25 m	6.69 m

Stability Margin

Available VCG =	25.23 m
Stability Margin =	3.82 m



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are as follows: Weight - metric tonnes, density - metric tonnes per cubic m

956
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Sea Water Ballast Tanks	Max Vol. m ³	Density t/m ³	TCG from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	9 -0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	9 0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	9 0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	9 1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	9 -3.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	7 -1.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	9 -6.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	9 -9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	2 1.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	2 -0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	1 8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	1 5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	9 0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	9 1.7	18.3	-	-
SW Ballast 11P	644.7	1.025	9 0.0	10.1	-	-
SW Ballast 11S	644.7	1.025	9 0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	9 0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	9 0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	1 0.44	5.28	0.041	0.123
SW Ballast 16S	249.7	1.025	1			
SW Ballast 17P	523.9	1.025	9 -0.023	21.353	0.044	0.125
SW Ballast 17S	523.9	1.025	9			
SW Ballast 18P	555.2	1.025	9			
SW Ballast 18S	555.2	1.025	9			
SW Ballast 19P	728.8	1.025	9			
SW Ballast 19S	728.8	1.025	9			
SW Ballast 20P	768.2	1.025	9			
SW Ballast 20S	768.2	1.025	9			
SW Ballast 21P	963.7	1.025	9			
SW Ballast 21S	963.7	1.025	9			
SW Ballast 22P	1067.3	1.025	9			
SW Ballast 22S	1067.3	1.025	9			
SW Ballast 23P	665.6	1.025	9			
SW Ballast 23S	665.6	1.025	9			
SW Ballast 24P	980.8	1.025	9			
SW Ballast 24S	980.8	1.025	9			
SW Ballast 25P	665.6	1.025	9			
SW Ballast 25S	665.6	1.025	9			
SW Ballast 26P	980.8	1.025	9			
SW Ballast 26S	980.8	1.025	9			
SW Ballast Total						

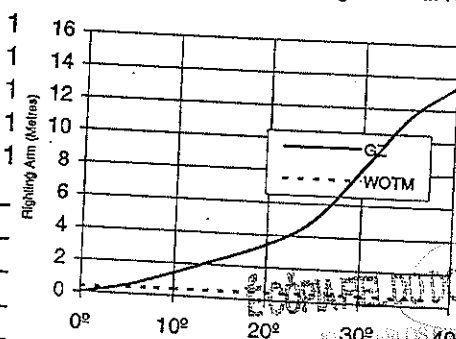
Stability

Corrected VCG =	21.40 m	21.48 m
MT / KML =	27.60 m	28.10 m
MT / GML =	6.20 m	6.62 m

Stability Margin

allowable VCG =	25.23 m
Stability Margin =	3.75 m

Righting Arm & Overturning Arm Curve



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er Tanks	ID	%	Density	Weight	LCG		ID	Chain	Weight	LCG	TCG	VCG
Water Tanks	8P	0%	1.000	0.0	40.25	rt Aft (Winch 2)	1aP	337	63.9	87.52	-30.50	4.60
Water Tanks	8S	0%	1.000	0.0	40.25	rt Aft (Winch 4)	1bP	337	63.9	81.65	-30.50	4.60
Water Tanks	9P	0%	1.000	0.0	40.53	rt Aft (Winch 3)	5P	337	63.9	86.47	-31.12	16.19
Water Tanks	14P	0%	1.000	0.0	40.53	rt Aft (Winch 1)	9P	450	85.3	91.05	-33.48	13.72
Water Tanks	14S	0%	1.000	0.0	72.39	rt Fwd (Winch 5)	2aP	337	63.9	31.13	-30.50	4.60
Water Tanks	15P	0%	1.000	0.0	72.39	rt Fwd (Winch 7)	2bP	337	63.9	25.26	-30.50	4.60
Water Tanks	15S	0%	1.000	0.0	72.34	rt Fwd (Winch 6)	6P	337	63.9	26.31	-31.12	16.19
Water Tanks (Process FW)	0			0.0	0.00	rt Fwd (Winch 8)	10P	450	85.3	21.73	-33.48	13.72
						rt Aft (Winch 13)	4aS	337	63.9	81.65	30.50	4.60
						rt Aft (Winch 15)	4bS	337	63.9	87.52	30.50	4.60
						rt Aft (Winch 14)	8S	337	63.9	66.47	31.12	16.19
						rt Aft (Winch 16)	12S	450	85.3	91.05	33.48	13.72
						rt Fwd (Winch 10)	3aS	337	63.9	25.26	30.50	4.60
						rt Fwd (Winch 12)	3bS	337	63.9	31.13	30.50	4.60
						rt Fwd (Winch 11)	7S	337	63.9	26.31	31.12	16.19
						rt Fwd (Winch 9)	11S	450	85.3	21.73	33.48	13.72
	0			402.7	84.36		0	5844	1107.6	56.39	0.00	10.08
table Water	ID	%	Density	Weight	LCG		ID	Tension	Weight	LCG	TCG	VCG
ot Water Tk	1P	100%	1.000	193.8	84.58	ich 9)	S1	0	0.0	24.63	38.00	18.29
ot Water Tk	1S	100%	1.000	193.8	84.58	ich 10)	S2	140	112.1	28.19	38.00	18.29
ot Water Day Tk	0	100%	1.000	15.2	78.87	ich 11)	S3	140	112.3	31.75	38.00	18.29
						ich 12)	S4	140	112.4	35.31	38.00	18.29
						ich 13)	S5	140	112.3	81.02	38.00	18.29
						ich 14)	S6	140	112.6	84.58	38.00	18.29
						ich 15)	S7	140	112.6	88.14	38.00	18.29
						ich 16)	S8	0	0.0	91.70	38.00	18.29
						ich 8)	P1	0	0.0	24.63	-38.00	18.29
						ich 6)	P2	140	106.5	28.19	-38.00	18.29
						ich 5)	P3	140	106.1	31.75	-38.00	18.29
						ich 4)	P4	140	105.5	35.31	-38.00	18.29
						ch 3)	P5	140	99.6	81.02	-38.00	18.29
						ch 2)	P6	140	100.4	84.58	-38.00	18.29
						ch 1)	P7	140	101.2	88.14	-38.00	18.29
							P8	0	0.0	91.70	-38.00	18.29
	0			15.8	78.91		0					
el Oil	ID	%	Density	Weight	LCG	Forces	ID	Tension	Weight	LCG	TCG	VCG
D Tank	10P	0%	0.960	0.0	51.05	ich 9)	S1	0	0.0	24.63	38.00	18.29
D Tank	10S	0%	0.960	0.0	51.05	ich 10)	S2	140	112.1	28.19	38.00	18.29
D Tank	12P	0%	0.960	0.0	61.72	ich 11)	S3	140	112.3	31.75	38.00	18.29
D Tank	12S	0%	0.960	0.0	61.72	ich 12)	S4	140	112.4	35.31	38.00	18.29
D Overflow	P	50%	0.960	8.2	78.94	ich 13)	S5	140	112.3	81.02	38.00	18.29
D Overflow	S	50%	0.960	7.6	78.87	ich 14)	S6	140	112.6	84.58	38.00	18.29
	0					ich 15)	S7	140	112.6	88.14	38.00	18.29
						ich 16)	S8	0	0.0	91.70	38.00	18.29
						ich 8)	P1	0	0.0	24.63	-38.00	18.29
						ich 6)	P2	140	106.5	28.19	-38.00	18.29
						ich 5)	P3	140	106.1	31.75	-38.00	18.29
						ich 4)	P4	140	105.5	35.31	-38.00	18.29
						ch 3)	P5	140	99.6	81.02	-38.00	18.29
						ch 2)	P6	140	100.4	84.58	-38.00	18.29
						ch 1)	P7	140	101.2	88.14	-38.00	18.29
							P8	0	0.0	91.70	-38.00	18.29
	0			374.0	76.13		0					
el Oil	ID	%	Density	Weight	LCG	TT	ID	%	Weight	LCG	TCG	VCG
ains Storage Tank Port	N1P	0%	0.900	0.0	84.85	TT-01	TT-01	10%	0.8	-63.61	9.85	37.88
ains Storage Tank Stbd	N1S	0%	0.900	0.0	84.85	TT-02	TT-02	10%	0.8	49.26	9.85	37.88
aste Oil	N1P	10%	1.000	1.9	80.72	TT-03	TT-03	-10%	4.2	88.40	-31.10	37.88
aste Oil	N1S	10%	1.000	1.9	80.72	TT-04	TT-04	10%	3.1	81.40	-32.18	37.88
r Compressors LO Storage	T65101	100%	0.900	0.8	78.47	TT-05	TT-05	10%	10.0	85.97	-23.86	37.58
oring Winch LO Storage	T65105	100%	0.900	0.3	78.17	TT-06	TT-06	10%	5.1	88.61	24.15	37.58
oring Winch LO Storage	T65106	100%	0.900	0.3	34.55	TT-07	TT-07	10%	5.2	80.51	24.00	37.58
oring Winch LO Storage	T65107	100%	0.900	0.3	23.33	TT-08	TT-08	5%	4.1	82.90	31.44	37.88
oring Winch LO Storage	T65108	100%	0.900	0.3	91.04	TT-09	TT-09	5%	3.0	69.19	-5.33	37.88
m. Gen. LO Storage	T65109	100%	0.900	0.5	48.60	TT-10	TT-10	10%	3.3	75.27	-8.16	37.78
1 Room LO Storage	T65110	100%	0.900	0.8	35.87	TT-11	TT-11	10%	4.4	75.27	-1.02	37.78
1 Room LO Storage	T65111	100%	0.900	0.8	35.87	TT-12	TT-12	10%	3.1	75.37	4.83	37.68
rbine Lube Oil Console 'C'	UQ-122308	0%	0.900	0.0	89.67	TT-13	TT-13	10%	0.6	61.89	-2.75	37.58
rbine Lube Oil Console 'B'	UQ-122306	0%	0.900	0.0	89.68	TT-14	TT-14	10%	2.0	37.67	22.62	37.58
rbine Lube Oil Console 'A'	UQ-122304	0%	0.900	0.0	89.71	TT-15	TT-15	10%	6.1	73.19	23.30	37.58
	0			7.9	65.81		0					
neous Tanks	ID	%	Density	Weight	LCG	MD	ID	%	Weight	LCG	TCG	VCG
ling Tank	P	10%	1.000	0.5	78.49	Storage	MD-01	5%	1.4	65.89	8.51	43.87
in	S	10%	1.000	0.5	78.49		MD-02	5%	1.4	48.89	8.51	43.87
ing Drain Tank	P	0%	1.000	0.0	77.13		MD-03	10%	4.6	48.89	8.51	43.87
LL ring Drain Tank	S	0%	1.000	0.0	77.13		0					
aerator Tower (Port)	C-51001	0%	1.000	0.0	85.08							
aerator Tower (Starb)	C-52001	0%	1.000	0.0	85.08							
iliary Generator DO	GE-514001	100%	0.870	1.0	54.39							
t Column Separator Tank	N1P	0%	1.000	0.0	79.72							
t Column Separator Tank	N1S	0%	1.000	0.0	79.72							
	0			2.1	66.77							
scellaneous Tanks	ID	%	Density	Weight	LCG	down Areas	ID	%	Weight	LCG	TCG	VCG
on Structural Tanks	T05001A	0%	1.316	0.0	25.00	LD-01	LD-01	0%	0.0	21.10	-35.80	48.90
vd clmn p-tk	T05001B	0%	1.316	0.0	28.15	LD-02	LD-02	40%	30.4	37.14	10.07	43.00
vd clmn p-tk	T05001A	0%	1.316	0.0	28.15	LD-03	LD-03	40%	21.3	39.27	-11.28	43.00
vd clmn p-tk	T05001B	0%	1.316	0.0	25.00	LD-04	LD-04	50%	29.6	95.42	0.43	43.00
lfuel Refuel	A58001	100%	1.000	7.9	34.55	LD-05	LD-05	50%	28.3	95.44	15.43	43.00
lfuel Disp	A58002	100%	1.000	0.1	25.91	LD-06	LD-06	50%	31.9	95.44	30.60	43.00
inerator DO Day Tank	T59305	100%	0.870	0.2	21.66	LD-07	LD-07	0%	0.0	73.34	-5.46	43.00
V Chem Dosing Tank	T55101	100%	1.000	2.0	63.02	LD-08	LD-08	0%	0.0	73.34	9.54	43.00
V Cooling Exansion Tank	T55102	100%	1.000	0.5	64.97	LD-09	LD-09	0%	0.0	73.34	24.54	43.00
ly Water Separators	V-66201/V-66202	100%	0.900	1.4	80.77	LD-10	LD-10	0%	0.0	106.05	-19.00	36.58
ycol Sump Tank	TQ-123301	0%	1.080	0.0	55.23	LD-11	LD-11	60%	127.2	30.37	1.29	43.00
nk Top Sump Tank	V-533605	0%	1.000	0.0	76.22		0					
	0			12.1	45.58							

nts are as follows: Weight - metric tonnes, density - metric tonnes per cubic me

Mooring Installation Draft (18.0m) - 4 Lines (

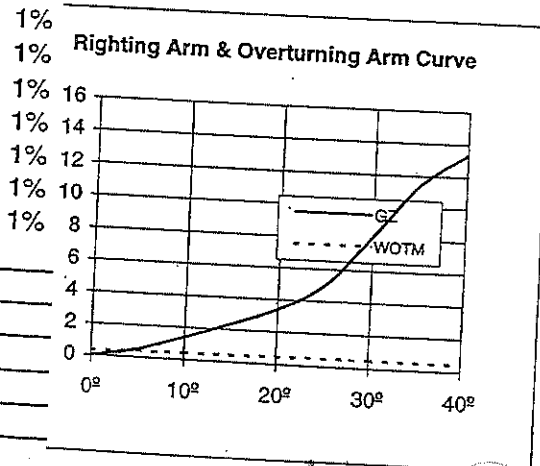
are as follows: Weight - metric tonnes, density - metric tonnes per cubic metre.

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Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	% GZ m CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	99%0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	99%0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	99%0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	99%0.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	96%3.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	58%4.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	99%0.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	99%0.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	28%0.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	21%0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	1%0.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	1%0.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	99%0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	99%0.7	18.3	-	-
SW Ballast 11P	644.7	1.025	99%0.0	9.7	-	-
SW Ballast 11S	644.7	1.025	99%0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	99%0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	99%0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	1%40	5.13	0.041	0.123
SW Ballast 16S	249.7	1.025	1%			
SW Ballast 17P	523.9	1.025	99%0.23	21.401	0.044	0.125
SW Ballast 17S	523.9	1.025	99%			
SW Ballast 18P	555.2	1.025	99%al Stability			
SW Ballast 18S	555.2	1.025	99%			
SW Ballast 19P	728.8	1.025	59%ected VCG =	21.44 m	21.53 m	
SW Ballast 19S	728.8	1.025	91%/ KML =	27.60 m	28.10 m	
SW Ballast 20P	768.2	1.025	99%/ GML =	6.16 m	6.57 m	
SW Ballast 20S	768.2	1.025	99%			
SW Ballast 21P	963.7	1.025	20%ity Margin			
SW Ballast 21S	963.7	1.025	54%			
SW Ballast 22P	1067.3	1.025	1%able VCG =	25.23 m		
SW Ballast 22S	1067.3	1.025	1%ity Margin =	3.70 m		
SW Ballast 23P	665.6	1.025	1%			
SW Ballast 23S	665.6	1.025	1%			
SW Ballast 24P	980.8	1.025	1%			
SW Ballast 24S	980.8	1.025	1%			
SW Ballast 25P	665.6	1.025	1%			
SW Ballast 25S	665.6	1.025	1%			
SW Ballast 26P	980.8	1.025	1%			
SW Ballast 26S	980.8	1.025	1%			
SW Ballast Total						

59%ected VCG =	21.44 m	21.53 m
91%/ KML =	27.60 m	28.10 m
99%/ GML =	6.16 m	6.57 m

20%ity Margin	
54%	
1%able VCG =	25.23 m
1%ity Margin =	3.70 m



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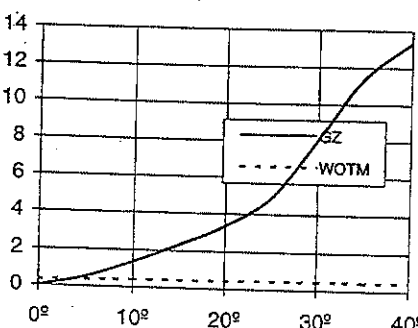
JOSE CARLOS FERNANDES DA SILVA
DIRETOR

MA-3010.38-1320-915-NBD-009

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Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	% SG m CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	99%0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	99%0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	99%0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	99%0.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	86%0.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	46%0.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	99%0.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	99%0.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	28%0.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	21%0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	1%0.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	1%0.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	99%0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	99%0.6	18.3	-	-
SW Ballast 11P	644.7	1.025	99%0.0	10.1	-	-
SW Ballast 11S	644.7	1.025	99%0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	99%0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	99%0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	1%0.37	5.05	0.041	0.123
SW Ballast 16S	249.7	1.025	1%			
SW Ballast 17P	523.9	1.025	99%0.23	21.489	0.044	0.125
SW Ballast 17S	523.9	1.025	99%			
SW Ballast 18P	555.2	1.025	99%cal Stability			
SW Ballast 18S	555.2	1.025	99%			
SW Ballast 19P	728.8	1.025	47%ected VCG =	21.53 m	21.61 m	
SW Ballast 19S	728.8	1.025	78% / KML =	27.60 m	28.10 m	
SW Ballast 20P	768.2	1.025	99% / GML =	6.07 m	6.49 m	
SW Ballast 20S	768.2	1.025	99%			
SW Ballast 21P	963.7	1.025	20%ility Margin			
SW Ballast 21S	963.7	1.025	54%			
SW Ballast 22P	1067.3	1.025	1% nable VCG =		25.23 m	
SW Ballast 22S	1067.3	1.025	1% ility Margin =		3.62 m	
SW Ballast 23P	665.6	1.025	1%			
SW Ballast 23S	665.6	1.025	1%			
SW Ballast 24P	980.8	1.025	1%			
SW Ballast 24S	980.8	1.025	1%			
SW Ballast 25P	665.6	1.025	1%			
SW Ballast 25S	665.6	1.025	1%			
SW Ballast 26P	980.8	1.025	1%			
SW Ballast 26S	980.8	1.025	1%			
SW Ballast Total						

Righting Arm & Overturning Arm Curve



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JOSE CARLOS PIMENTA / 03/10
DENTON
DIVISÃO DE SE

Drill Water Tanks	ID	%	Density	Weight	LCG
Drill Water Tanks	8P	0%	1.000	0.0	40.25
Drill Water Tanks	8S	0%	1.000	0.0	40.25
Drill Water Tanks	9P	0%	1.000	0.0	40.53
Drill Water Tanks	9S	0%	1.000	0.0	40.53
Drill Water Tanks	14P	0%	1.000	0.0	72.39
Drill Water Tanks	14S	0%	1.000	0.0	72.39
Drill Water Tanks	15P	0%	1.000	0.0	72.34
Drill Water Tanks	15S	0%	1.000	0.0	72.34
Drill Water Tanks (Process FW)	0			0.0	0.00

Potable Water	ID	%	Density	Weight	LCG
Pot Water Tk	1P	100%	1.000	193.8	84.58
Pot Water Tk	1S	100%	1.000	193.8	84.58
Pot Water Day Tk	0	100%	1.000	15.2	78.87
Potable Water	0			402.7	84.36

Fuel Oil			402.7	84.36	
FO Tank	ID	%	Density	Weight	LCG
FO Tank	10P	0%	0.960	0.0	51.05
FO Tank	10S	0%	0.960	0.0	51.05
FO Tank	12P	0%	0.960	0.0	61.72
FO Overflow	12S	0%	0.960	0.0	61.72
FO Overflow	P	50%	0.960	8.2	78.94
	S	50%	0.960	7.6	78.87
Fuel Oil	0			15.8	78.91

	ID	%	Density	Weight	LCG
X edge	N1P	0%	0.870	0.0	67.61
X edge	N1S	0%	0.870	0.0	78.58
X edge	N1P	100%	0.870	105.3	74.52
X Day Tk	N2P	100%	0.870	110.6	74.60
XO Settl	N3S	100%	0.870	73.5	82.01
XO Service	N4S	100%	0.870	73.5	79.15
	0	100%	0.870	11.2	48.01

iesel Oil				374.0	76.13
Sub Oils					
ains Storage Tank Port	ID	%	Density	Weight	LCG
ains Storage Tank Stbd	N1P	0%	0.900	0.0	84.85
aste Oil	N1S	0%	0.900	0.0	84.85
aste Oil	N1P	10%	1.000	1.9	80.72
r Compressors LO Storage	N1S	10%	1.000	1.9	80.72
oring Winch LO Storage	T65101	100%	0.900	0.8	78.47
oring Winch LO Storage	T65105	100%	0.900	0.3	78.17
oring Winch LO Storage	T65106	100%	0.900	0.3	34.65
oring Winch LO Storage	T65107	100%	0.900	0.3	23.33
1. Gen. LO Storage	T65108	100%	0.900	0.3	91.04
Room LO Storage	T65109	100%	0.900	0.5	48.60
Room LO Storage	T65110	100%	0.900	0.8	35.87
rbine Lube Oil Console 'C'	T65111	100%	0.900	0.8	35.87
rbine Lube Oil Console 'B'	UQ-122308	0%	0.900	0.0	89.67
rbine Lube Oil Console 'A'	UQ-122306	0%	0.900	0.0	89.68
	UQ-122304	0%	0.900	0.0	89.71
Sub Oils				7.9	65.81
	0				

Process Tanks	ID	%	Density	Weight	LCG
Ring Tank	P	10%	1.000	0.5	78.49
Ring Tank	P	10%	1.000	0.5	78.49
Ring Tank	S	0%	1.000	0.0	77.13
Generator Tower (Port)	S	0%	1.000	0.0	77.13
Generator Tower (Starb)	C-51001	0%	1.000	0.0	85.08
Generator Tower DO	C-52001	0%	1.000	0.0	85.08
Column Separator Tank	GE-514001	100%	0.870	1.0	54.39
Column Separator Tank	N1P	0%	1.000	0.0	79.72
Column Separator Tank	N1S	0%	1.000	0.0	79.72
Miscellaneous Tanks					
	0			2.1	66.77

Structural Tanks	ID	%	Density	Weight	LCG
clmn p-tk	T05001A	0%	1.316	0.0	25.00
clmn p-tk	T05001B	0%	1.316	0.0	28.15
clmn p-tk	T05001A	0%	1.316	0.0	28.15
clmn p-tk	T05001B	0%	1.316	0.0	25.00
uel Refuel	A58001	100%	1.000	7.9	34.55
uel Dis	A58002	100%	1.000	0.1	25.91
erator DO Day Tank	T59305	100%	0.870	0.2	21.66
hem Dosing Tank	T55101	100%	1.000	2.0	63.02
ooling ExansionTank	T55102	100%	1.000	0.5	64.97
Water Separators	V-66201/V-66202	100%	0.900	1.4	80.77
ump Tank	TQ-123301	0%	1.080	0.0	55.23
Top Sump Tank	V-533605	0%	1.000	0.0	76.22
Structural Tanks	0			12.1	45.58

	ID	Chain	Weight	LCG	TCG	WCG
Aft (Winch 2)	1aP	337	63.9	87.52	-30.50	4.60
Aft (Winch 4)	1bP	337	63.9	81.65	-30.50	4.60
Aft (Winch 3)	5P	337	63.9	86.47	-31.12	16.19
Aft (Winch 1)	9P	450	85.3	91.05	-33.48	13.72
Fwd (Winch 5)	2aP	337	63.9	31.13	-30.50	4.60
Fwd (Winch 7)	2bP	337	63.9	25.26	-30.50	4.60
Fwd (Winch 6)	6P	337	63.9	26.31	-31.12	16.19
Fwd (Winch 8)	10P	450	85.3	21.73	-33.48	13.72
Aft (Winch 13)	4aS	337	63.9	81.65	30.50	4.60
Aft (Winch 15)	4bS	337	63.9	87.52	30.50	4.60
Aft (Winch 14)	8S	337	63.9	86.47	31.12	16.19
Aft (Winch 16)	12S	450	85.3	91.05	33.48	13.72
Fwd (Winch 10)	3aS	337	63.9	25.26	30.50	4.60
Fwd (Winch 12)	3bS	337	63.9	31.13	30.50	4.60
Fwd (Winch 11)	7S	337	63.9	26.31	31.12	16.19
Fwd (Winch 9)	11S	450	85.3	21.73	33.48	13.72
	0	5844	1107.6	56.39	0.00	10.08

Forces	ID	Tension	Weight	LCG	TCG	VCG
h 9)	S1	0	0.0	24.63	38.00	18.29
h 10)	S2	140	112.1	28.19	38.00	18.29
h 11)	S3	140	112.3	31.75	38.00	18.29
h 12)	S4	140	112.4	35.31	38.00	18.29
h 13)	S5	140	112.3	81.02	38.00	18.29
h 14)	S6	140	112.6	84.58	38.00	18.29
h 15)	S7	140	112.6	88.14	38.00	18.29
h 16)	S8	0	0.0	91.70	38.00	18.29
h 8)	P1	0	0.0	24.63	-38.00	18.29
h 7)	P2	140	106.5	28.19	-38.00	18.29
h 6)	P3	140	106.1	31.75	-38.00	18.29
h 5)	P4	140	105.5	35.31	-38.00	18.29
h 4)	P5	140	99.6	81.02	-38.00	18.29
h 3)	P6	140	100.4	84.58	-38.00	18.29
h 2)	P7	140	101.2	88.14	-38.00	18.29
h 1)	P8	0	0.0	91.70	-38.00	18.29
Forces	0		1299.6	57.84	1.62	18.29

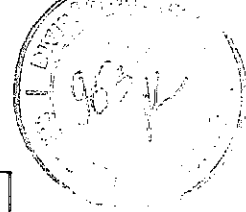
TT	ID	%	Weight	LCG	TCG	VCG
	TT-01	10%	0.8	63.51	9.85	37.88
	TT-02	10%	0.8	49.26	9.85	37.88
	TT-03	10%	4.2	88.40	-31.10	37.88
	TT-04	10%	3.1	81.40	-32.18	37.88
ouse	TT-05	10%	10.0	85.97	-23.86	37.58
ouse	TT-06	10%	5.1	88.61	24.15	37.58
	TT-07	10%	5.2	80.51	24.00	37.58
	TT-08	5%	4.1	82.90	31.44	37.88
p	TT-09	5%	3.0	69.19	-5.33	37.88
	TT-10	10%	3.3	75.27	-8.16	37.78
p	TT-11	10%	4.4	75.27	-1.02	37.78
ydwn Area	TT-12	10%	3.1	75.37	4.83	37.68
Laydown Area	TT-13	10%	0.6	61.89	-2.75	37.58
orkshop	TT-14	10%	2.0	37.67	22.62	37.58
	TT-15	10%	6.1	73.19	23.30	37.58
T	0		55.6	78.24	1.41	37.70

MD	ID	%	Weight	LCG	TCG	VCG
Storage	MD-01	5%	1.4	65.89	8.51	43.87
	MD-02	5%	1.4	48.89	8.51	43.87 ²⁰
	MD-03	10%	4.6	48.89	8.51	43.87
D	0		7.4	52.10	8.51	43.87

Down Areas	ID	%	Weight	LCG	TCG	VCG
	HD	0%	0.0	21.10	-35.80	48.90
	LD-01	40%	30.4	37.14	10.07	43.00
	LD-02	40%	30.0	38.55	-3.52	43.00
Down	LD-03	40%	21.3	39.27	-11.28	43.00
Down	LD-04	50%	29.6	95.42	0.43	43.00
Down	LD-05	50%	29.3	95.44	15.43	43.00
	LD-06	50%	31.9	95.44	30.80	43.00
	LD-07	0%	0.0	73.34	-5.46	43.00
	LD-08	0%	0.0	73.34	9.54	43.00
	LD-09	0%	0.0	73.34	24.54	43.00
Down	LD-10	0%	0.0	106.05	-19.00	36.58
	LD-11	60%	127.2	30.37	1.29	43.00
Down Areas	0		298.7	52.07	5.21	43.00

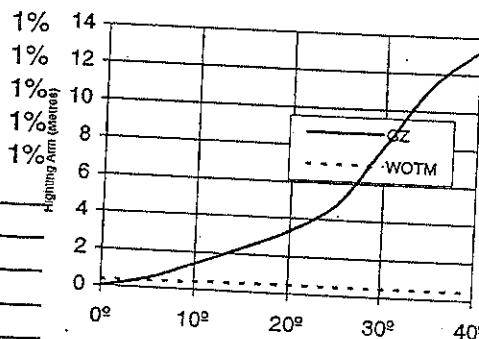
ID	Weight	LCG	TCG	VCG
0	0.0	0.00	0.00	0.00
0	0.0	0.00	0.00	0.00
0	0.0	0.00	0.00	0.00
0	0.0	0.00	0.00	0.00
0	0.0	0.00	0.00	0.00
	0.0	0.00	0.00	0.00

are as follows: Weight - metric tonnes, density - metric tonnes per cubic metre



Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	% TCG from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	99%-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	99%0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	99%0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	99%1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	76%-3.6	39.1	0.001	0.000
SW Ballast 3S	728.7	1.025	34%-1.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	99%-6.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	99%-9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	28%1.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	21%-0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	1% 8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	1% 5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	99%0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	99%1.5	18.3	-	-
SW Ballast 11P	644.7	1.025	99%0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	99%0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	99%0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	99%0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	1%1.34	5.03	0.040	0.120
SW Ballast 16S	249.7	1.025	1%			
SW Ballast 17P	523.9	1.025	99%0.023	21.581	0.043	0.121
SW Ballast 17S	523.9	1.025	99%			
SW Ballast 18P	555.2	1.025	99%ical Stability			
SW Ballast 18S	555.2	1.025	99%			
SW Ballast 19P	728.8	1.025	35%rected VCG =	21.62 m	21.70 m	
SW Ballast 19S	728.8	1.025	66% / KML =	27.60 m	28.10 m	
SW Ballast 20P	768.2	1.025	99% / GML =	5.98 m	6.40 m	
SW Ballast 20S	768.2	1.025	99%			
SW Ballast 21P	963.7	1.025	20%ility Margin			
SW Ballast 21S	963.7	1.025	54%			
SW Ballast 22P	1067.3	1.025	1%wable VCG =		25.23 m	
SW Ballast 22S	1067.3	1.025	1%ility Margin =		3.53 m	
SW Ballast 23P	665.6	1.025	1%			
SW Ballast 23S	665.6	1.025	1%			
SW Ballast 24P	980.8	1.025	1%			
SW Ballast 24S	980.8	1.025	1%			
SW Ballast 25P	665.6	1.025	1%			
SW Ballast 25S	665.6	1.025	1%			
SW Ballast 26P	980.8	1.025	1%			
SW Ballast 26S	980.8	1.025	1%			
SW Ballast Total						

Righting Arm & Overturning Arm Curve



Prepared	BY
Checked	

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MA-3010.38-1320-915-NBD-909

É CÔPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL DA SILVA
DIRETOR
DATA 10/10/2010

Water Tanks						DENTON						
	ID	%	Density	Weight	LCG	ID	Chain	Weight	LCG	TCG	VCG	
Water Tanks	8p	0%	1.000	0.0	40.2	Port Aft (Winch 2)	1aP	337	63.9	87.52	-30.50	4.60
Water Tanks	8S	0%	1.000	0.0	40.2	Port Aft (Winch 4)	1bP	337	63.9	81.65	-30.50	4.60
Drill Water Tanks	9P	0%	1.000	0.0	40.5	Port Aft (Winch 3)	5P	337	63.9	86.47	-31.12	16.19
Drill Water Tanks	9S	0%	1.000	0.0	40.5	Port Aft (Winch 1)	9P	337	63.9	91.05	-33.48	13.72
Drill Water Tanks	14P	0%	1.000	0.0	72.3	Port Fwd (Winch 5)	2aP	337	63.9	31.13	-30.50	4.60
Drill Water Tanks	14S	0%	1.000	0.0	72.3	Port Fwd (Winch 7)	2bP	337	63.9	25.26	-30.50	4.60
Drill Water Tanks	15P	0%	1.000	0.0	72.3	Port Fwd (Winch 6)	6P	337	63.9	26.31	-31.12	16.19
Drill Water Tanks	15S	0%	1.000	0.0	72.3	Port Fwd (Winch 8)	10P	337	63.9	21.73	-33.48	13.72
Drill Water Tanks (Process FW)						0	0.00					
						Stbd Aft (Winch 13)	4aS	337	63.9	81.65	30.50	4.60
						Stbd Aft (Winch 15)	4bS	337	63.9	87.52	30.50	4.60
						Stbd Aft (Winch 14)	8S	337	63.9	86.47	31.12	16.19
						Stbd Aft (Winch 16)	12S	337	63.9	91.05	33.48	13.72
						Stbd Fwd (Winch 10)	3aS	337	63.9	25.26	30.50	4.60
						Stbd Fwd (Winch 12)	3bS	337	63.9	31.13	30.50	4.60
						Stbd Fwd (Winch 11)	7S	337	63.9	26.31	31.12	16.19
						Stbd Fwd (Winch 9)	11S	337	63.9	21.73	33.48	13.72
Potable Water						0		5392	1021.9	56.39	0.00	9.78
Pot Water Tk	1P	100%	1.000	193.8	LCG							
Pot Water Tk	1S	100%	1.000	193.8	LCG							
Pot Water Day Tk	0	100%	1.000	15.2	LCG							
Potable Water						0						
						402.7	84.3					
Fuel Oil												
FO Tank	10P	0%	0.960	0.0	LCG							
FO Tank	10S	0%	0.960	0.0	LCG							
FO Tank	12P	0%	0.960	0.0	LCG							
FO Tank	12S	0%	0.960	0.0	LCG							
FO Overflow	P	50%	0.960	8.2	LCG							
FO Overflow	S	50%	0.960	7.6	LCG							
Fuel Oil						0						
						15.8	78.9					
Oil												
udge	N1P	0%	0.870	0.0	LCG							
udge	N1S	0%	0.870	0.0	LCG							
tle	N1P	100%	0.870	105.3	LCG							
ay Tk	N2P	100%	0.870	110.6	LCG							
O Day Tk	N3S	100%	0.870	73.5	LCG							
O Settl	N4S	100%	0.870	73.5	LCG							
O Service	0	100%	0.870	11.2	LCG							
Fuel Oil						0						
						374.0	76.1					
Sub Oils												
ains Storage Tank Port	N1P	0%	0.900	0.0	LCG							
ains Storage Tank Stbd	N1S	0%	0.900	0.0	LCG							
aste Oil	N1P	10%	1.000	1.9	LCG							
aste Oil	N1S	10%	1.000	1.9	LCG							
r Compressors LO Storage	T65101	100%	0.900	0.8	LCG							
oring Winch LO Storage	T65105	100%	0.900	0.3	LCG							
oring Winch LO Storage	T65106	100%	0.900	0.3	LCG							
oring Winch LO Storage	T65107	100%	0.900	0.3	LCG							
oring Winch LO Storage	T65108	100%	0.900	0.3	LCG							
n. Gen. LO Storage	T65109	100%	0.900	0.5	LCG							
Room LO Storage	T65110	100%	0.900	0.8	LCG							
Room LO Storage	T65111	100%	0.900	0.8	LCG							
rbine Lube Oil Console 'C'	UQ-122308	0%	0.900	0.0	LCG							
rbine Lube Oil Console 'B'	UQ-122306	0%	0.900	0.0	LCG							
rbine Lube Oil Console 'A'	UQ-122304	0%	0.900	0.0	LCG							
Sub Oils						0						
						7.9	65.8					
Miscellaneous Tanks												
olding Tank	P	10%	1.000	0.5	LCG							
olding Tank	S	10%	1.000	0.5	LCG							
ing Dr. Tank	P	0%	1.000	0.0	LCG							
ring Dr. Tank	S	0%	1.000	0.0	LCG							
erator Tower (Port)	C-51001	0%	1.000	0.0	LCG							
erator Tower (Starb)	C-52001	0%	1.000	0.0	LCG							
iliary Generator DO	GE-514001	100%	0.870	1.0	LCG							
Column Separator Tank	N1P	0%	1.000	0.0	LCG							
Column Separator Tank	N1S	0%	1.000	0.0	LCG							
Miscellaneous Tanks						0		55.8	78.24	1.41	37.70	
Structural Tanks												
clmn p-tk	T05001A	0%	1.316	0.0	LCG							
clmn p-tk	T05001B	0%	1.316	0.0	LCG							
clmn p-tk	T05001A	0%	1.316	0.0	LCG							
clmn p-tk	T05001B	0%	1.316	0.0	LCG							
fuel Refuel	A58001	100%	1.000	7.9	LCG							
fuel Disp	A58002	100%	1.000	0.1	LCG							
erator DO Day Tank	T59305	100%	0.870	0.2	LCG							
Chem Dosing Tank	T55101	100%	1.000	2.0	LCG							
Cooling Exansion Tank	T55102	100%	1.000	0.5	LCG							
Water Separators	V-66201/V-66202	100%	0.900	1.4	LCG							
ol Sump Tank	TQ-123301	0%	1.080	0.0	LCG							
Top Sump Tank	V-533805	0%	1.000	0.0	LCG							
Structural Tanks						0						
						12.1	45.5					

Is as are follows: Weight - metric tonnes, density - metric tonnes per cubic m

9657

Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	%TCG from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	99% -0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	99% 0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	99% 0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	99% 1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	99% -3.6	39.1	0.000	0.000
SW Ballast 3S	728.7	1.025	99% -1.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	99% -6.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	99% -9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	1% -1.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	1% -0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	99% 8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	99% 5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	99% 0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	99% 1.5	18.3	-	-
SW Ballast 11P	644.7	1.025	99% 0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	99% 0.0	0.0	-	-
SW Ballast 13P	644.7	1.025	99% 0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	99% 0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	1% 0.23	6.43	0.061	0.067
SW Ballast 16S	249.7	1.025	1%			
SW Ballast 17P	523.9	1.025	99% 0.025	20.321	0.063	0.068
SW Ballast 17S	523.9	1.025	99%			
SW Ballast 18P	555.2	1.025	99%			
SW Ballast 18S	555.2	1.025	99%			
SW Ballast 19P	728.8	1.025	99%			
SW Ballast 19S	728.8	1.025	99%			
SW Ballast 20P	768.2	1.025	99%			
SW Ballast 20S	768.2	1.025	99%			
SW Ballast 21P	963.7	1.025	99%			
SW Ballast 21S	963.7	1.025	99%			
SW Ballast 22P	1067.3	1.025	1%			
SW Ballast 22S	1067.3	1.025	1%			
SW Ballast 23P	665.6	1.025	1%			
SW Ballast 23S	665.6	1.025	1%			
SW Ballast 24P	980.8	1.025	92%			
SW Ballast 24S	980.8	1.025	98%			
SW Ballast 25P	665.6	1.025	1%			
SW Ballast 25S	665.6	1.025	1%			
SW Ballast 26P	980.8	1.025	28%			
SW Ballast 26S	980.8	1.025	42%			
SW Ballast Total						

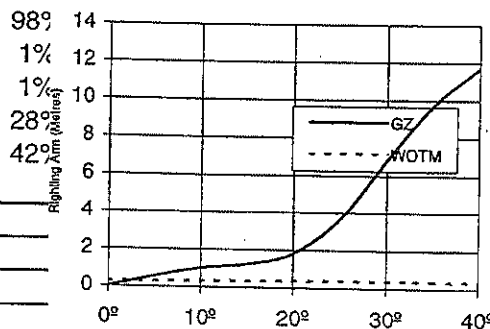
99% Rectal Stability

99% Corrected VCG =	20.38 m	20.39 m
99% T / KML =	26.80 m	27.20 m
99% T / GML =	6.42 m	6.81 m

99% Stability Margin

1% Wable VCG =	23.04 m
1% Stability Margin =	2.65 m

Righting Arm & Overturning Arm Curve



	BY
Prepared	
Checked	

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JOSE CARLOS MOURA
DIRETOR
ENCARGADO

Water Tanks						Water Tanks						Water Tanks						Water Tanks							
ID	%	Density	Weight	LCG		ID	%	Density	Weight	LCG		ID	%	Density	Weight	LCG		ID	%	Density	Weight	LCG			
8P	0%	1.000	0.0	40.25		1Aft (Winch 2)	1aP	337	63.9	87.52	-30.50	1aP	337	63.9	87.52	-30.50	1aP	337	63.9	87.52	-30.50	1aP	337	63.9	87.52
8S	0%	1.000	0.0	40.25		1Aft (Winch 4)	1bP	337	63.9	87.52	-30.50	1bP	337	63.9	87.52	-30.50	1bP	337	63.9	87.52	-30.50	1bP	337	63.9	87.52
9P	0%	1.000	0.0	40.53		1Aft (Winch 3)	5P	337	63.9	86.47	-31.12	5P	337	63.9	86.47	-31.12	5P	337	63.9	86.47	-31.12	5P	337	63.9	86.47
9S	0%	1.000	0.0	40.53		1Aft (Winch 1)	9P	337	63.9	91.05	-33.48	9P	337	63.9	91.05	-33.48	9P	337	63.9	91.05	-33.48	9P	337	63.9	91.05
14P	0%	1.000	0.0	72.39		1Fwd (Winch 5)	2aP	337	63.9	31.13	-30.50	2aP	337	63.9	31.13	-30.50	2aP	337	63.9	31.13	-30.50	2aP	337	63.9	31.13
14S	0%	1.000	0.0	72.39		1Fwd (Winch 7)	2bP	337	63.9	25.26	-30.50	2bP	337	63.9	25.26	-30.50	2bP	337	63.9	25.26	-30.50	2bP	337	63.9	25.26
15P	0%	1.000	0.0	72.34		1Fwd (Winch 6)	6P	337	63.9	26.31	-31.12	6P	337	63.9	26.31	-31.12	6P	337	63.9	26.31	-31.12	6P	337	63.9	26.31
15S	0%	1.000	0.0	72.34		1Fwd (Winch 8)	10P	337	63.9	21.73	-33.48	10P	337	63.9	21.73	-33.48	10P	337	63.9	21.73	-33.48	10P	337	63.9	21.73
0			0.0	0.00		1Fwd (Winch 13)	4aS	337	63.9	81.65	30.50	4aS	337	63.9	81.65	30.50	4aS	337	63.9	81.65	30.50	4aS	337	63.9	81.65
0			0.0	0.00		1Fwd (Winch 15)	4bS	337	63.9	87.52	30.50	4bS	337	63.9	87.52	30.50	4bS	337	63.9	87.52	30.50	4bS	337	63.9	87.52
0			0.0	0.00		1Fwd (Winch 14)	8S	337	63.9	86.47	31.12	8S	337	63.9	86.47	31.12	8S	337	63.9	86.47	31.12	8S	337	63.9	86.47
0			0.0	0.00		1Fwd (Winch 16)	12S	337	63.9	91.05	33.48	12S	337	63.9	91.05	33.48	12S	337	63.9	91.05	33.48	12S	337	63.9	91.05
0			0.0	0.00		1Fwd (Winch 10)	3aS	337	63.9	25.26	30.50	3aS	337	63.9	25.26	30.50	3aS	337	63.9	25.26	30.50	3aS	337	63.9	25.26
0			0.0	0.00		1Fwd (Winch 12)	3bS	337	63.9	31.13	30.50	3bS	337	63.9	31.13	30.50	3bS	337	63.9	31.13	30.50	3bS	337	63.9	31.13
0			0.0	0.00		1Fwd (Winch 11)	7S	337	63.9	26.31	31.12	7S	337	63.9	26.31	31.12	7S	337	63.9	26.31	31.12	7S	337	63.9	26.31
0			0.0	0.00		1Fwd (Winch 9)	11S	337	63.9	21.73	33.48	11S	337	63.9	21.73	33.48	11S	337	63.9	21.73	33.48	11S	337	63.9	21.73
0			0.0	0.00																					
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re as follows: Weight - metric tonnes, density - metric tonnes per cubic metre

7.5 BALLASTING FOR RISER INSTALLATION CONDITIONS

Subject to Riser Installation Procedures and Riser Pull-in Sequence

Loading Conditions attached:

Description	Draft	Comments
2 SCR & all Port Risers Attached	22.00m	These Conditions are worst cases - all individual conditions should be assessed by the Stability Officer
2 SCR & all Port & Aft Risers Attached	22.00m	
2 SCR & all Port, Aft & Stbd Risers Attached	22.00m	
2 SCR & all Risers Attached	22.00m	

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Sea Water Ballast Tanks	Max Vol. m ³	Density t/m ³	% TCG from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	99% -0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	99% 0.0	0.0	0.000	0.000
SW Ballast 2P	877.6	1.025	99% 0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	99% 1.7	35.4	0.001	0.000
SW Ballast 3P	728.7	1.025	99% -3.6	39.1	0.000	0.000
SW Ballast 3S	728.7	1.025	99% -1.6	24.3	0.000	0.000
SW Ballast 4P	798.3	1.025	99% -6.1	25.8	0.000	0.001
SW Ballast 4S	798.3	1.025	99% -9.0	44.2	0.000	0.000
SW Ballast 5P	256.6	1.025	1% 1.4	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	1% -0.6	41.1	0.000	0.000
SW Ballast 6P	523.9	1.025	99% 8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	99% 5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	99% 0.0	0.0	0.001	0.000
SW Ballast 7S	555.2	1.025	99% 1.5	18.3	-	-
SW Ballast 11P	644.7	1.025	99% 0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	99% 25.7	6.3	-	-
SW Ballast 13P	644.7	1.025	99% 0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	99% 0.0	0.0	0.000	0.000
SW Ballast 16P	249.7	1.025	1% 1.05	6.04	0.070	0.140
SW Ballast 16S	249.7	1.025	1%			
SW Ballast 17P	523.9	1.025	99% 0.025	20.174	0.072	0.141
SW Ballast 17S	523.9	1.025	99%			
SW Ballast 18P	555.2	1.025	99%			
SW Ballast 18S	555.2	1.025	99%			
SW Ballast 19P	728.8	1.025	99%			
SW Ballast 19S	728.8	1.025	99%			
SW Ballast 20P	768.2	1.025	99%			
SW Ballast 20S	768.2	1.025	99%			
SW Ballast 21P	963.7	1.025	74%			
SW Ballast 21S	963.7	1.025	99%			
SW Ballast 22P	1067.3	1.025	1%			
SW Ballast 22S	1067.3	1.025	1%			
SW Ballast 23P	665.6	1.025	1%			
SW Ballast 23S	665.6	1.025	1%			
SW Ballast 24P	980.8	1.025	52%			
SW Ballast 24S	980.8	1.025	98%			
SW Ballast 25P	665.6	1.025	1%			
SW Ballast 25S	665.6	1.025	1%			
SW Ballast 26P	980.8	1.025	28%			
SW Ballast 26S	980.8	1.025	42%			
SW Ballast Total						

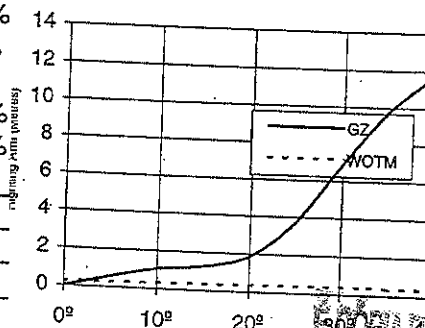
99% Initial Stability

99% Corrected VCG =	20.25 m	20.32 m
99% $\bar{r}$ / KML =	26.80 m	27.20 m
99% $\bar{r}$ / GML =	6.55 m	6.88 m

74% Initial Stability Margin

1% Available VCG =	23.04 m
1% Initial Stability Margin =	2.72 m

Righting Arm & Overturning Arm Curve



	BY	
Prepared		
Checked		

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ading Condition:

Installation of 2 SCR & Portside Ris



Water Tanks	ID	%	Density	Weight
Drill Water Tanks	8P	0%	1.000	0.0
Drill Water Tanks	8S	0%	1.000	0.0
Drill Water Tanks	9P	0%	1.000	0.0
Drill Water Tanks	9S	0%	1.000	0.0
Drill Water Tanks	14P	0%	1.000	0.0
Drill Water Tanks	14S	0%	1.000	0.0
Drill Water Tanks	15P	0%	1.000	0.0
Drill Water Tanks	15S	0%	1.000	0.0
Drill Water Tanks (Process FW)	0			0.0

Potable Water	ID	%	Density	Weight
Pot Water Tk	1P	100%	1.000	193.8
Pot Water Tk	1S	100%	1.000	193.8
Pot Water Day Tk	0	100%	1.000	15.2
Potable Water	0			402.7

Fuel Oil	ID	%	Density	Weight
FO Tank	10P	0%	0.960	0.0
FO Tank	10S	0%	0.960	0.0
FO Tank	12P	0%	0.960	0.0
FO Tank	12S	0%	0.960	0.0
FO Overflow	P	50%	0.960	8.2
FO Overflow	S	50%	0.960	7.6
Fuel Oil	0			15.8

Oil	ID	%	Density	Weight
DC	N1P	0%	0.870	0.0
DO Day Tk	N1S	0%	0.870	0.0
DO Day Tk	N2P	100%	0.870	105.3
DO Sett	N3S	100%	0.870	110.6
DO Service	N4S	100%	0.870	73.5
Diesel Oil	0	100%	0.870	11.2
	0			374.0

Lub Oils	ID	%	Density	Weight
Drains Storage Tank Port	N1P	0%	0.900	0.0
Drains Storage Tank Stbd	N1S	0%	0.900	0.0
Waste Oil	N1P	10%	1.000	1.9
Waste Oil	N1S	10%	1.000	1.9
Air Compressors LO Storage	T65101	100%	0.900	0.8
Mooring Winch LO Storage	T65105	100%	0.900	0.3
Mooring Winch LO Storage	T65106	100%	0.900	0.3
Mooring Winch LO Storage	T65107	100%	0.900	0.3
Mooring Winch LO Storage	T65108	100%	0.900	0.3
Em. Gen. LO Storage	T65109	100%	0.900	0.5
AI Room LO Storage	T65110	100%	0.900	0.8
AI Room LO Storage	T65111	100%	0.900	0.8
Turbine Lube Oil Console 'C'	UQ-122308	0%	0.900	0.0
Turbine Lube Oil Console 'B'	UQ-122306	0%	0.900	0.0
Turbine Lube Oil Console 'A'	UQ-122304	0%	0.900	0.0
Lub Oils	0			7.9

Miscellaneous Tanks	ID	%	Density	Weight
olding Tank	P	10%	1.000	0.5
olding Tank	S	10%	1.000	0.5
V.I. Tank	P	0%	1.000	0.0
V.I. Tank	S	0%	1.000	0.0
leaserator Tower (Port)	C-51001	0%	1.000	0.0
leaserator Tower (Starb)	C-52001	0%	1.000	0.0
auxiliary Generator DO	GE-514001	100%	0.870	1.0
ift Column Separator Tank	N1P	0%	1.000	0.0
ift Column Separator Tank	N1S	0%	1.000	0.0
Miscellaneous Tanks	0			2.1

on Structural Tanks	ID	%	Density	Weight
wd clmn p-tk	T05001A	0%	1.316	0.0
wd clmn p-tk	T05001B	0%	1.316	0.0
wd clmn p-tk	T05001A	0%	1.316	0.0
wd clmn p-tk	T05001B	0%	1.316	0.0
elifuel Refuel	A58001	100%	1.000	7.9
elifuel Disp	A58002	100%	1.000	0.1
enerator DO Day Tank	T59305	100%	0.870	0.2
N Chem Dosing Tank	T55101	100%	1.000	2.0
N Cooling Exansion Tank	T55102	100%	1.000	0.5
ly Water Separators	V-66201/V-66202	100%	0.900	1.4
ycol Sump Tank	TQ-123301	0%	1.080	0.0
ink Top Sump Tank	V-533605	0%	1.000	0.0
on Structural Tanks	0			12.1

Port Aft (Winch 2)	ID	Chain	Weight	LCG	TCG	VCG
Port Aft (Winch 2)	1aP	337	63.9	87.52	-30.50	4.60
Port Aft (Winch 4)	1bP	337	63.9	81.65	-30.50	4.60
Port Aft (Winch 3)	5P	337	63.9	86.47	-31.12	16.19
Port Aft (Winch 1)	9P	337	63.9	91.05	-33.48	13.72
Port Fwd (Winch 5)	2aP	337	63.9	31.13	-30.50	4.60
Port Fwd (Winch 7)	2bP	337	63.9	25.26	-30.50	4.60
Port Fwd (Winch 6)	6P	337	63.9	26.31	-31.12	16.19
Port Fwd (Winch 8)	10P	337	63.9	21.73	-33.48	13.72
Stbd Aft (Winch 13)	4aS	337	63.9	81.65	30.50	4.60
Stbd Aft (Winch 15)	4bS	337	63.9	87.52	30.50	4.60
Stbd Aft (Winch 14)	8S	337	63.9	86.47	31.12	16.19
Stbd Fwd (Winch 16)	12S	337	63.9	91.05	33.48	13.72
Stbd Fwd (Winch 10)	3aS	337	63.9	25.26	30.50	4.60
Stbd Fwd (Winch 12)	3bS	337	63.9	31.13	30.50	4.60
Stbd Fwd (Winch 11)	7S	337	63.9	26.31	31.12	16.19
Stbd Fwd (Winch 9)	11S	337	63.9	21.73	33.48	13.72
	0	5392	1021.9	56.39	0.00	9.78

ng Forces	ID	Tension	Weight	LCG	TCG	VCG
Winch 9)	S1	140	111.7	24.63	38.00	18.29
Winch 10)	S2	140	112.1	28.19	38.00	18.29
Winch 11)	S3	140	112.3	31.75	38.00	18.29
Winch 12)	S4	140	112.4	35.31	38.00	18.29
Winch 13)	S5	140	112.3	81.02	38.00	18.29
Winch 14)	S6	140	112.6	84.58	38.00	18.29
Winch 15)	S7	140	112.6	88.14	38.00	18.29
Winch 16)	S8	140	112.5	91.70	38.00	18.29
Winch 8)	P1	140	107.0	24.63	-38.00	18.29
Winch 7)	P2	140	106.5	28.19	-38.00	18.29
Winch 6)	P3	140	106.1	31.75	-38.00	18.29
Winch 5)	P4	140	105.5	35.31	-38.00	18.29
Winch 4)	P5	140	99.6	81.02	-38.00	18.29
Winch 3)	P6	140	100.4	84.58	-38.00	18.29
Winch 2)	P7	140	101.2	88.14	-38.00	18.29
Winch 1)	P8	140	102.4	91.70	-38.00	18.29
Forces	0		1727.2	57.85	1.54	18.29

TT	ID	%	Weight	LCG	TCG	VCG
TT-01	TT-01	10%	0.8	63.51	9.85	37.88
TT-02	TT-02	10%	0.8	49.26	9.85	37.88
TT-03	TT-03	10%	4.2	88.40	-31.10	37.88
TT-04	TT-04	10%	3.1	81.40	-32.16	37.88
TT-05	TT-05	10%	10.0	85.97	-23.86	37.58
TT-06	TT-06	10%	5.1	88.61	24.15	37.58
TT-07	TT-07	10%	5.2	80.51	24.00	37.58
TT-08	TT-08	5%	4.1	82.90	31.44	37.88
TT-09	TT-09	5%	3.0	69.19	-5.33	37.88
TT-10	TT-10	10%	3.3	75.27	-8.16	37.78
TT-11	TT-11	10%	4.4	75.27	-1.02	37.78
TT-12	TT-12	10%	3.1	75.37	4.83	37.68
TT-13	TT-13	10%	0.6	61.89	-2.75	37.58
TT-14	TT-14	10%	2.0	37.67	22.62	37.58
TT-15	TT-15	10%	6.1	73.19	23.30	37.58
TT	0		55.8	78.24	1.41	37.70

MD	ID	%	Weight	LCG	TCG	VCG
MD-01	MD-01	5%	1.4	65.89	8.51	43.87
MD-02	MD-02	5%	1.4	48.89	8.51	43.87
MD-03	MD-03	10%	4.6	48.89	8.51	43.87
MD	0		7.4	52.10	8.51	43.87

down Areas	ID	%	Weight	LCG	TCG	VCG
LD-01	LD-01	0%	0.0	21.10	-35.80	48.90
LD-02	LD-02	40%	30.4	37.14	10.07	43.00
LD-03	LD-03	40%	30.0	38.55	-3.52	43.00
LD-04	LD-04	40%	21.3	39.27	-11.28	43.00
LD-05	LD-05	50%	29.6	95.42	0.43	43.00
LD-06	LD-06	50%	28.3	95.44	15.43	43.00
LD-07	LD-07	50%	31.9	95.44	30.80	43.00
LD-08	LD-08	0%	0.0	73.34	-5.46	43.00
LD-09	LD-09	0%	0.0	73.34	9.54	43.00
LD-10	LD-10	0%	0.0	73.34	24.54	43.00
LD-11	LD-11	60%	127.2	106.05	-19.00	36.58
down Areas	0		298.7	52.07	5.21	43.00

ns	ID	Weight	LCG	TCG	VCG
0	0	0.0	0.00	0.00	0.00
0	0	0.0	0.00	0.00	0.00
0	0	0.0	0.00	0.00	0.00
0	0	0.0	0.00	0.00	0.00
0	0	0.0	0.00	0.00	0.00
0	0	0.0	0.00	0.00	0.00
0	0	0.0	0.00	0.00	0.00

Units are as follows: Weight - metric tonnes, density - metric tonnes per cub

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Sea Water Ballast Tanks	Max Vol. m ³	Density t/m ³	CG m CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	950.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	950.0	4.4	0.000	0.000
SW Ballast 2P	877.6	1.025	950.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	950.0	5.1	0.000	0.000
SW Ballast 3P	728.7	1.025	13.5	39.0	0.000	0.000
SW Ballast 3S	728.7	1.025	46.1	40.6	0.000	0.000
SW Ballast 4P	798.3	1.025	950.1	27.7	0.000	0.001
SW Ballast 4S	798.3	1.025	950.3	42.1	0.000	0.000
SW Ballast 5P	256.6	1.025	14.3	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	15.2	41.0	0.000	0.000
SW Ballast 6P	523.9	1.025	63.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	950.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	951.7	43.7	0.004	0.013
SW Ballast 7S	555.2	1.025	951.5	18.3	-	-
SW Ballast 11P	644.7	1.025	950.0	9.8	-	-
SW Ballast 11S	644.7	1.025	957.5	22.8	-	-
SW Ballast 13P	644.7	1.025	950.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	950.0	0.0	-	-
SW Ballast 16P	249.7	1.025	13.2	5.42	0.022	0.105
SW Ballast 16S	249.7	1.025	1			
SW Ballast 17P	523.9	1.025	950.25	22.05	0.027	0.118
SW Ballast 17S	523.9	1.025	95			
SW Ballast 18P	555.2	1.025	95			
SW Ballast 18S	555.2	1.025	95			
SW Ballast 19P	728.8	1.025	1			
SW Ballast 19S	728.8	1.025	1			
SW Ballast 20P	768.2	1.025	1			
SW Ballast 20S	768.2	1.025	95			
SW Ballast 21P	963.7	1.025	1			
SW Ballast 21S	963.7	1.025	1			
SW Ballast 22P	1067.3	1.025	1			
SW Ballast 22S	1067.3	1.025	1			
SW Ballast 23P	665.6	1.025	1			
SW Ballast 23S	665.6	1.025	1			
SW Ballast 24P	980.8	1.025	1			
SW Ballast 24S	980.8	1.025	1			
SW Ballast 25P	665.6	1.025	1			
SW Ballast 25S	665.6	1.025	1			
SW Ballast 26P	980.8	1.025	1			
SW Ballast 26S	980.8	1.025	1			
SW Ballast Total						

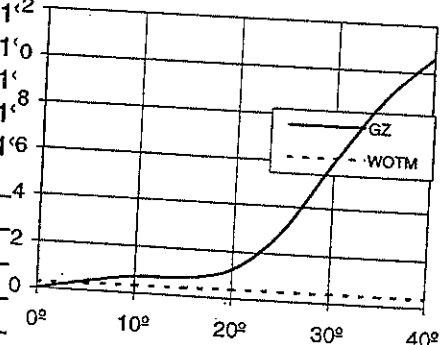
Cal Stability

Corrected VCG =	22.07 m	22.17 m
1' / KML =	26.80 m	27.20 m
1' / GML =	4.73 m	5.03 m

Stability Margin

Variable VCG =	23.04 m
Stability Margin =	0.87 m

Righting Arm & Overturning Arm Curve



Prepared	BY
Checked	

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MA-3010.38-1320.915-NBD-909-RETO ORIGINAL

NOBLE DENTON PRESENTED TO
DIRECTOR
NAVY OF CANADA

Tanks	ID	%	Density	Weight	LCG
Water Tank	8p	100%	1.000	276.2	40.25
Water Tank	8S	100%	1.000	276.2	40.25
Water Tanks	9P	100%	1.000	248.5	40.53
Water Tanks	9S	100%	1.000	248.5	40.53
Water Tanks	14P	0%	1.000	0.0	72.39
Water Tanks	14S	0%	1.000	0.0	72.39
Water Tanks	15P	0%	1.000	0.0	72.34
Water Tanks	15S	0%	1.000	0.0	72.34
Water Tanks (Process FW)	0			1049.3	40.38

Water	ID	%	Density	Weight	LCG
Water Tk	1P	100%	1.000	193.8	84.58
Water Tk	1S	100%	1.000	193.8	84.58
Water Day Tk	0	100%	1.000	15.2	78.87
Water	0			402.7	84.36

Oil	ID	%	Density	Weight	LCG
Tank	10P	100%	0.960	586.3	51.05
Tank	10S	100%	0.960	586.3	51.05
Tank	12P	100%	0.960	589.5	61.72
Tank	12S	100%	0.960	589.5	61.72
Overflow	P	100%	0.960	16.4	78.94
Overflow	S	100%	0.960	15.1	78.87
Oil	0			2383.0	56.70

Oil	ID	%	Density	Weight	LCG
Settle	N1P	100%	0.870	3.6	67.61
Day Tk	N1S	100%	0.870	3.6	78.58
Day Tk	N1P	100%	0.870	105.3	74.52
Day Tk	N2P	100%	0.870	110.6	74.60
Day Tk	N3S	100%	0.870	73.5	62.01
Day Tk	N4S	100%	0.870	73.5	79.15
Service	0	100%	0.870	11.2	48.01
Oil	0			381.2	76.08

Oil	ID	%	Density	Weight	LCG
Storage Tank Port	N1P	0%	0.900	0.0	84.85
Storage Tank Stbd	N1S	0%	0.900	0.0	84.85
Oil	N1P	50%	1.000	9.6	80.72
Oil	N1S	50%	1.000	9.6	80.72
Compressors LO Storage	T65101	100%	0.900	0.8	78.47
Winch LO Storage	T65105	100%	0.900	0.3	78.17
Winch LO Storage	T65106	100%	0.900	0.3	34.65
Winch LO Storage	T65107	100%	0.900	0.3	23.33
Winch LO Storage	T65108	100%	0.900	0.3	91.04
ten. LO Storage	T65109	100%	0.900	0.5	48.60
om LO Storage	T65110	100%	0.900	0.8	35.87
om LO Storage	T65111	100%	0.900	0.8	35.87
Lube Oil Console 'C'	UQ-122308	100%	0.900	15.0	89.67
Lube Oil Console 'B'	UQ-122306	100%	0.900	15.0	89.68
Lube Oil Console 'A'	UQ-122304	100%	0.900	15.0	89.71
Oil	0			68.2	84.90

Oil	ID	%	Density	Weight	LCG
ing Tank	P	50%	1.000	2.6	78.49
ing Tank	S	50%	1.000	2.6	78.49
ing Drain	P	50%	1.000	1.4	77.13
ing Drain	S	50%	1.000	1.4	77.13
tor Tower (Port)	C-51001	100%	1.000	37.9	85.08
tor Tower (Starb)	C-52001	100%	1.000	37.9	85.08
y Generator DO	GE-514001	100%	0.870	1.0	54.39
urn Separator Tank	N1P	100%	1.000	13.8	79.72
urn Separator Tank	N1S	100%	1.000	13.8	79.72
aneous Tanks	0			112.5	82.99

Structural Tanks	ID	%	Density	Weight	LCG
an p-tk	T05001A	0%	1.316	0.0	25.00
an p-tk	T05001B	0%	1.316	0.0	28.15
an p-tk	T05001A	0%	1.316	0.0	28.15
an p-tk	T05001B	0%	1.316	0.0	28.15
Refuel	A58001	100%	1.000	7.9	34.55
Disp	A58002	100%	1.000	0.1	25.91
tor DO Day Tank	T55101	100%	0.870	0.2	21.66
m Dosing Tank	T55102	100%	1.000	2.0	63.02
ling Expansion Tank	T55102	100%	1.000	0.5	64.97
ler Separators	V-66201/V-66202	100%	0.900	1.4	80.77
ump Tank	TQ-123301	60%	1.080	12.1	55.23
p Sump Tank	V-533605	50%	1.000	8.0	76.22
Structural Tanks	0			32.1	56.82

as follows: Weight - metric tonnes, density - metric tonnes per cubic met.

ID	Chain	Weight	LCG	TCG	VCG
1aP	337	63.9	87.52	-30.50	4.60
1bP	337	63.9	86.47	-31.12	16.19
5P	337	63.9	81.65	-30.50	4.60
9P	337	63.9	86.47	-31.12	16.19
2aP	337	63.9	91.05	-33.48	13.72
2bP	337	63.9	31.13	-30.50	4.60
6P	337	63.9	25.26	-30.50	4.60
10P	337	63.9	26.31	-31.12	16.19
4aS	337	63.9	21.73	-33.48	13.72
4bS	337	63.9	81.65	30.50	4.60
8S	337	63.9	87.52	30.50	4.60
12S	337	63.9	86.47	31.12	16.19
3aS	337	63.9	91.05	33.48	13.72
3bS	337	63.9	25.26	30.50	4.60
7S	337	63.9	31.13	30.50	4.60
11S	337	63.9	26.31	31.12	16.19
0	5392	1021.9	56.39	0.00	9.78

ID	Tension	Weight	LCG	TCG	VCG
S1	140	111.7	24.63	38.00	18.29
S2	140	112.1	28.19	38.00	18.29
S3	140	112.3	31.75	38.00	18.29
S4	140	112.4	35.31	38.00	18.29
S5	140	112.3	81.02	38.00	18.29
S6	140	112.6	84.58	38.00	18.29
S7	140	112.6	88.14	38.00	18.29
S8	140	112.5	91.70	38.00	18.29
P1	140	107.0	24.63	-38.00	18.29
P2	140	106.5	28.19	-38.00	18.29
P3	140	106.1	31.75	-38.00	18.29
P4	140	105.5	35.31	-38.00	18.29
P5	140	99.6	81.02	-38.00	18.29
P6	140	100.4	84.58	-38.00	18.29
P7	140	101.2	88.14	-38.00	18.29
P8	140	102.4	91.70	-38.00	18.29
0			1727.2	57.85	1.54

ID	%	Weight	LCG	TCG	VCG
TT-01	99%	8.0	63.51	9.85	37.88
TT-02	99%	8.0	49.26	9.85	37.88
TT-03	25%	10.6	88.40	-31.10	37.88
TT-04	30%	9.3	81.40	-32.18	37.88
TT-05	20%	19.9	85.97	-23.86	37.58
TT-06	60%	30.9	88.61	24.15	37.58
TT-07	60%	31.4	80.51	24.00	37.58
TT-08	5%	4.1	82.90	31.44	37.88
TT-09	5%	3.0	69.19	-5.33	37.88
TT-10	50%	16.3	75.27	-8.16	37.78
TT-11	30%	13.1	75.27	-1.02	37.78
TT-12	20%	6.2	75.37	4.83	37.68
TT-13	10%	0.6	61.89	-2.75	37.58
TT-14	10%	2.0	37.67	22.62	37.58
TT-15	10%	6.1	73.19	23.30	37.58
0			169.3	78.84	4.33

ID	%	Weight	LCG	TCG	VCG
MD-01	20%	5.6	65.89	8.51	43.87
MD-02	35%	9.7	48.89	8.51	43.87
MD-03	60%	27.6	48.89	8.51	43.87
0			42.9	51.10	8.51

ID	%	Weight	LCG	TCG	VCG
LD-01	0%	0.0	21.10	-35.80	48.90
LD-02	40%	30.4	37.14	10.07	43.00
LD-03	40%	30.0	38.55	-3.52	43.00
LD-04	40%	21.3	39.27	-11.28	43.00
LD-05	50%	29.6	95.42	0.43	43.00
LD-06	50%	28.3	95.44	15.43	43.00
LD-07	50%	31.9	95.44	30.80	43.00
LD-08	0%	0.0	73.34	-5.46	43.00
LD-09	0%	0.0	73.34	9.54	43.00
LD-10	0%	0.0	73.34	24.54	43.00
LD-11	60%	127.2	106.05	-19.00	36.58
0			298.7	52.07	5.21

ID	Weight	LCG	TCG	VCG
0	0.0	0.00	0.00	0.00
0	0.0	0.00	0.00	0.00
0	0.0	0.00	0.00	0.00
0	0.0	0.00	0.00	0.00
0	0.0	0.00	0.00	0.00
0	0.0	0.00	0.00	0.00
0	0.0	0.00	0.00	0.00
0	0.0	0.00	0.00	0.00
0	0.0	0.00	0.00	0.00
0	0.0	0.00	0.00	0.00



Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	CG m CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	95.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	95.0	4.4	0.000	0.000
SW Ballast 2P	877.6	1.025	95.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	95.0	5.1	0.000	0.000
SW Ballast 3P	728.7	1.025	16.5	39.0	0.000	0.000
SW Ballast 3S	728.7	1.025	15.1	40.6	0.000	0.000
SW Ballast 4P	798.3	1.025	95.1	27.7	0.000	0.001
SW Ballast 4S	798.3	1.025	95.3	42.1	0.000	0.000
SW Ballast 5P	256.6	1.025	11.3	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	11.2	41.0	0.000	0.000
SW Ballast 6P	523.9	1.025	38.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	66.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	99.1.7	43.7	0.004	0.013
SW Ballast 7S	555.2	1.025	20.5	18.3	-	-
SW Ballast 11P	644.7	1.025	99.0	9.8	-	-
SW Ballast 11S	644.7	1.025	99.2	16.1	-	-
SW Ballast 13P	644.7	1.025	99.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	99.0	0.0	-	-
SW Ballast 16P	249.7	1.025	11.7	5.19	0.020	0.099
SW Ballast 16S	249.7	1.025	11.7	5.19	0.020	0.099
SW Ballast 17P	523.9	1.025	31.025	22.03	0.025	0.112
SW Ballast 17S	523.9	1.025	11.7	5.19	0.020	0.099
SW Ballast 18P	555.2	1.025	99.1.7	43.7	0.004	0.013
SW Ballast 18S	555.2	1.025	20.5	18.3	-	-
SW Ballast 19P	728.8	1.025	99.0	9.8	-	-
SW Ballast 19S	728.8	1.025	99.2	16.1	-	-
SW Ballast 20P	768.2	1.025	99.0	0.0	0.000	0.000
SW Ballast 20S	768.2	1.025	99.0	0.0	-	-
SW Ballast 21P	963.7	1.025	99.0	0.0	-	-
SW Ballast 21S	963.7	1.025	99.0	0.0	-	-
SW Ballast 22P	1067.3	1.025	99.0	0.0	-	-
SW Ballast 22S	1067.3	1.025	99.0	0.0	-	-
SW Ballast 23P	665.6	1.025	99.0	0.0	-	-
SW Ballast 23S	665.6	1.025	99.0	0.0	-	-
SW Ballast 24P	980.8	1.025	99.0	0.0	-	-
SW Ballast 24S	980.8	1.025	99.0	0.0	-	-
SW Ballast 25P	665.6	1.025	99.0	0.0	-	-
SW Ballast 25S	665.6	1.025	99.0	0.0	-	-
SW Ballast 26P	980.8	1.025	99.0	0.0	-	-
SW Ballast 26S	980.8	1.025	99.0	0.0	-	-
SW Ballast Total						

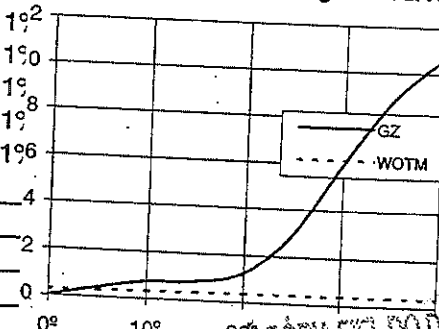
Cal Stability

Corrected VCG =	22.05 m	22.14 m
/ KML =	26.80 m	27.20 m
/ GML =	4.75 m	5.06 m

Stability Margin

Variable VCG =	23.04 m
Stability Margin =	0.90 m

Righting Arm & Overturning Arm Curve



Prepared	BY
Checked	



Water Tanks						Water Tanks						
	ID	%	Density	Weight	LCG		ID	Chain	Weight	LCG	TCG	VCG
Water Tanks	8P	100%	1.000	276.2	40.2	Water Tanks	1aP	337	63.9	87.52	-30.50	4.60
Water Tanks	8S	100%	1.000	276.2	40.2	Water Tanks	1bP	337	63.9	81.65	-30.50	4.60
Water Tanks	9P	100%	1.000	248.5	40.5	Water Tanks	5P	337	63.9	86.47	-31.12	16.19
Water Tanks	9S	100%	1.000	248.5	40.5	Water Tanks	9P	337	63.9	91.05	-33.48	13.72
Water Tanks	14P	0%	1.000	0.0	72.3	Water Tanks	2aP	337	63.9	31.13	-30.50	4.60
Water Tanks	14S	0%	1.000	0.0	72.3	Water Tanks	2bP	337	63.9	25.26	-30.50	4.60
Water Tanks	15P	0%	1.000	0.0	72.3	Water Tanks	6P	337	63.9	26.31	-31.12	16.19
Water Tanks	15S	0%	1.000	0.0	72.3	Water Tanks	10P	337	63.9	21.73	-33.48	13.72
Water Tanks (Process FW)	0			1049.3	40.3	Water Tanks	4aS	337	63.9	81.65	30.50	4.60
Water Tanks						Water Tanks	4bS	337	63.9	87.52	30.50	4.60
Water Tanks						Water Tanks	8S	337	63.9	86.47	31.12	16.19
Water Tanks						Water Tanks	12S	337	63.9	91.05	33.48	13.72
Water Tanks						Water Tanks	3aS	337	63.9	25.26	30.50	4.60
Water Tanks						Water Tanks	3bS	337	63.9	31.13	30.50	4.60
Water Tanks						Water Tanks	7S	337	63.9	26.31	31.12	16.19
Water Tanks						Water Tanks	11S	337	63.9	21.73	33.48	13.72
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are as follows: Weight - metric tonnes, density - metric tonnes per cubic metre

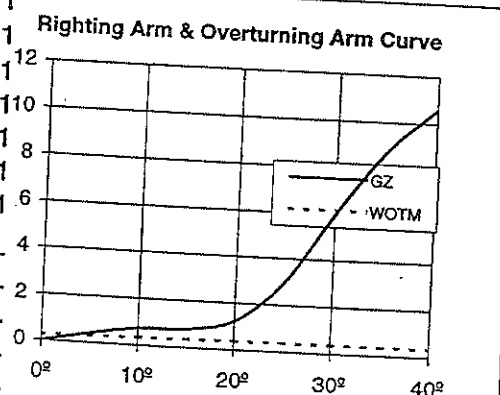
Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	CG m CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	90.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	90.0	4.4	0.000	0.000
SW Ballast 2P	877.6	1.025	90.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	90.0	5.1	0.000	0.000
SW Ballast 3P	728.7	1.025	13.5	39.0	0.000	0.000
SW Ballast 3S	728.7	1.025	16.1	40.6	0.000	0.000
SW Ballast 4P	798.3	1.025	90.1	27.7	0.000	0.001
SW Ballast 4S	798.3	1.025	96.3	42.1	0.000	0.000
SW Ballast 5P	256.6	1.025	14.3	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	10.2	41.0	0.000	0.000
SW Ballast 6P	523.9	1.025	18.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	45.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	91.7	43.7	0.004	0.013
SW Ballast 7S	555.2	1.025	11.5	18.3	-	-
SW Ballast 11P	644.7	1.025	90.0	9.8	-	-
SW Ballast 11S	644.7	1.025	92.8	15.1	-	-
SW Ballast 13P	644.7	1.025	90.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	90.0	0.0	-	-
SW Ballast 16P	249.7	1.025	10.8	5.42	0.007	0.055
SW Ballast 16S	249.7	1.025	1			
SW Ballast 17P	523.9	1.025	3.025	22.11	0.012	0.069
SW Ballast 17S	523.9	1.025	1			
SW Ballast 18P	555.2	1.025				
SW Ballast 18S	555.2	1.025				
SW Ballast 19P	728.8	1.025				
SW Ballast 19S	728.8	1.025				
SW Ballast 20P	768.2	1.025				
SW Ballast 20S	768.2	1.025				
SW Ballast 21P	963.7	1.025				
SW Ballast 21S	963.7	1.025				
SW Ballast 22P	1067.3	1.025				
SW Ballast 22S	1067.3	1.025				
SW Ballast 23P	665.6	1.025				
SW Ballast 23S	665.6	1.025				
SW Ballast 24P	980.8	1.025				
SW Ballast 24S	980.8	1.025				
SW Ballast 25P	665.6	1.025				
SW Ballast 25S	665.6	1.025				
SW Ballast 26P	980.8	1.025				
SW Ballast 26S	980.8	1.025				
SW Ballast Total						

Stability

Corrected VCG =	22.12 m	22.18 m
1 / KML =	26.80 m	27.20 m
1 / GML =	4.68 m	5.02 m

Stability Margin

Available VCG =	23.04 m
Stability Margin =	0.86 m



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MA-3010.38-1320-915-NBD-909

Water Tanks	ID	%	Density	Weight
Water Tanks	8P	100%	1.000	276.2
Drill Water Tanks	8S	100%	1.000	276.2
Drill Water Tanks	9P	100%	1.000	248.5
Drill Water Tanks	9S	100%	1.000	248.5
Drill Water Tanks	14P	0%	1.000	0.0
Drill Water Tanks	14S	0%	1.000	0.0
Drill Water Tanks	15P	0%	1.000	0.0
Drill Water Tanks	15S	0%	1.000	0.0
Drill Water Tanks (Process FW)	0			1049.3

Potable Water	ID	%	Density	Weight
Pot Water Tk	1P	100%	1.000	193.8
Pot Water Tk	1S	100%	1.000	193.8
Pot Water Day Tk	0	100%	1.000	15.2
Potable Water	0			402.7

Fuel Oil	ID	%	Density	Weight
FO Tank	10P	100%	0.960	586.3
FO Tank	10S	100%	0.960	586.3
FO Tank	12P	100%	0.960	589.5
FO Tank	12S	100%	0.960	589.5
FO Overflow	P	100%	0.960	16.4
FO Overflow	S	100%	0.960	15.1
Fuel Oil	0			2383.0

Oil	ID	%	Density	Weight
Oil	N1P	100%	0.870	3.6
Oil	N1S	100%	0.870	3.6
Oil	N1P	100%	0.870	105.3
Oil	N2P	100%	0.870	110.6
Oil	N3S	100%	0.870	73.5
Oil	N4S	100%	0.870	73.5
Oil	0	100%	0.870	11.2

Diesel Oil	ID	%	Density	Weight
Diesel Oil	0			381.2

Lub Oils	ID	%	Density	Weight
Drains Storage Tank Port	N1P	0%	0.900	0.0
Drains Storage Tank Stbd	N1S	0%	0.900	0.0
Waste Oil	N1P	50%	1.000	9.6
Waste Oil	N1S	50%	1.000	9.6
Air Compressors LO Storage	T65101	100%	0.900	0.8
Mooring Winch LO Storage	T65105	100%	0.900	0.3
Mooring Winch LO Storage	T65106	100%	0.900	0.3
Mooring Winch LO Storage	T65107	100%	0.900	0.3
Mooring Winch LO Storage	T65108	100%	0.900	0.3
Em. Gen. LO Storage	T65109	100%	0.900	0.5
WI Room LO Storage	T65110	100%	0.900	0.8
WI Room LO Storage	T65111	100%	0.900	0.8
Turbine Lube Oil Console 'C'	UQ-122308	100%	0.900	15.0
Turbine Lube Oil Console 'B'	UQ-122306	100%	0.900	15.0
Turbine Lube Oil Console 'A'	UQ-122304	100%	0.900	15.0
Lub Oils	0			68.2

Miscellaneous Tanks	ID	%	Density	Weight
Holding Tank	P	50%	1.000	2.6
Holding Tank	S	50%	1.000	2.6
Ring Tank	P	50%	1.000	1.4
Ring Tank	S	50%	1.000	1.4
Deaerator Tower (Port)	C-51001	100%	1.000	37.9
Deaerator Tower (Starb)	C-52001	100%	1.000	37.9
Auxiliary Generator DO	GE-514001	100%	0.870	1.0
Aft Column Separator Tank	N1P	100%	1.000	13.8
Aft Column Separator Tank	N1S	100%	1.000	13.8
Miscellaneous Tanks	0			112.5

Non Structural Tanks	ID	%	Density	Weight
Fwd clmn p-tk	T05001A	0%	1.316	0.0
Fwd clmn p-tk	T05001B	0%	1.316	0.0
Fwd clmn p-tk	T05001A	0%	1.316	0.0
Fwd clmn p-tk	T05001B	0%	1.316	0.0
Helifuel Refuel	A58001	100%	1.000	7.9
Helifuel Disp	A58002	100%	1.000	0.1
Incinerator DO Day Tank	T59305	100%	0.870	0.2
FW Chem Dosing Tank	T55101	100%	1.000	2.0
FW Cooling Expansion Tank	T55102	100%	1.000	0.5
Oily Water Separators	V-66201/V-66202	100%	0.900	1.4
Glycol Sump Tank	TQ-123301	60%	1.080	12.1
Tank Top Sump Tank	V-533605	50%	1.000	8.0
Non Structural Tanks	0			32.1

	ID	Chain	Weight	LCG	TCG	VCG
Port Aft (Winch 2)	1aP	337	63.9	87.52	-30.50	4.60
Port Aft (Winch 4)	1bP	337	63.9	81.65	-30.50	4.60
Port Aft (Winch 3)	5P	337	63.9	86.47	-31.12	16.19
Port Aft (Winch 1)	9P	337	63.9	91.05	-33.48	13.72
Port Fwd (Winch 5)	2aP	337	63.9	31.13	-30.50	4.60
Port Fwd (Winch 7)	2bP	337	63.9	25.26	-30.50	4.60
Port Fwd (Winch 6)	6P	337	63.9	26.31	-31.12	16.19
Port Fwd (Winch 8)	10P	337	63.9	21.73	-33.48	13.72
Port Aft (Winch 13)	4aS	337	63.9	81.65	30.50	4.60
Port Aft (Winch 15)	4bS	337	63.9	87.52	30.50	4.60
Port Aft (Winch 14)	8S	337	63.9	86.47	31.12	16.19
Port Aft (Winch 16)	12S	337	63.9	91.05	33.48	13.72
Port Fwd (Winch 10)	3aS	337	63.9	25.26	30.50	4.60
Port Fwd (Winch 12)	3bS	337	63.9	31.13	30.50	4.60
Port Fwd (Winch 11)	7S	337	63.9	26.31	31.12	16.19
Port Fwd (Winch 9)	11S	337	63.9	21.73	33.48	13.72
	0	5392	1021.9	56.39	0.00	9.78

Forces	ID	Tension	Weight	LCG	TCG	VCG
inch 9)	S1	140	111.7	24.63	38.00	18.29
inch 10)	S2	140	112.1	28.19	38.00	18.29
inch 11)	S3	140	112.3	31.75	38.00	18.29
inch 12)	S4	140	112.4	35.31	38.00	18.29
inch 13)	S5	140	112.3	81.02	38.00	18.29
inch 14)	S6	140	112.6	84.58	38.00	18.29
inch 15)	S7	140	112.6	88.14	38.00	18.29
inch 16)	S8	140	112.5	91.70	38.00	18.29
inch 8)	P1	140	107.0	24.63	-38.00	18.29
inch 7)	P2	140	106.5	28.19	-38.00	18.29
inch 6)	P3	140	106.1	31.75	-38.00	18.29
inch 5)	P4	140	105.5	35.31	-38.00	18.29
inch 4)	P5	140	99.6	81.02	-38.00	18.29
inch 3)	P6	140	100.4	84.58	-38.00	18.29
inch 2)	P7	140	101.2	88.14	-38.00	18.29
inch 1)	P8	140	102.4	91.70	-38.00	18.29

Forces	ID	Weight	LCG	TCG	VCG
	0	1727.2	57.85	1.54	18.29

TT	ID	%	Weight	LCG	TCG	VCG
TT-01	TT-01	99%	8.0	63.51	9.85	37.88
TT-02	TT-02	99%	8.0	49.26	9.85	37.88
TT-03	TT-03	25%	10.6	-88.40	-31.10	37.88
TT-04	TT-04	30%	9.3	81.40	-32.18	37.88
TT-05	TT-05	20%	19.9	85.97	-23.86	37.58
TT-06	TT-06	60%	30.9	88.61	24.15	37.58
TT-07	TT-07	60%	31.4	80.51	24.00	37.58
TT-08	TT-08	5%	4.1	82.90	31.44	37.88
TT-09	TT-09	5%	3.0	69.19	-5.33	37.88
TT-10	TT-10	50%	16.3	75.27	-8.16	37.78
TT-11	TT-11	30%	13.1	75.27	-1.02	37.78
TT-12	TT-12	20%	6.2	75.37	4.83	37.68
TT-13	TT-13	10%	0.6	61.89	-2.75	37.58
TT-14	TT-14	10%	2.0	37.67	22.62	37.58
TT-15	TT-15	10%	6.1	73.19	23.30	37.58
	0		169.3	78.84	4.33	37.69

MD	ID	%	Weight	LCG	TCG	VCG
MD-01	MD-01	20%	5.6	65.89	8.51	43.87
MD-02	MD-02	35%	9.7	48.89	8.51	43.87
MD-03	MD-03	60%	27.6	48.89	8.51	43.87
	0		42.9	51.10	8.51	43.87

MD	ID	%	Weight	LCG	TCG	VCG
LD-01	LD-01	40%	30.4	37.14	10.07	43.00
LD-02	LD-02	40%	30.0	38.55	-3.52	43.00
LD-03	LD-03	40%	21.3	39.27	-11.28	43.00
LD-04	LD-04	50%	29.6	95.42	0.43	43.00
LD-05	LD-05	50%	28.3	95.44	15.43	43.00
LD-06	LD-06	50%	31.9	95.44	30.80	43.00
LD-07	LD-07	0%	0.0	73.34	-5.46	43.00
LD-08	LD-08	0%	0.0	73.34	9.54	43.00
LD-09	LD-09	0%	0.0	73.34	24.54	43.00
LD-10	LD-10	0%	0.0	73.34	19.00	43.00
LD-11	LD-11	0%	0.0	73.34	14.50	43.00
	0		298.7	52.07	11.521	43.00

MD	ID	Weight	LCG	TCG	VCG
	0	0.0	0.00	0.00	0.00
	0	0.0	0.00	0.00	0.00
	0	0.0	0.00	0.00	0.00
	0	0.0	0.00	0.00	0.00
	0	0.0	0.00	0.00	0.00
	0	0.0	0.00	0.00	0.00
	0	0.0	0.00	0.00	0.00
	0	0.0	0.00	0.00	0.00
	0	0.0	0.00	0.00	0.00
	0	0.0	0.00	0.00	0.00

Units are as follows: Weight - metric tonnes, density - metric tonnes per cubic

7.6 BALLASTING FROM DRAFT = 22.0M "OPERATING CONDITION" TO DRAFT = 18.0M "INSPECTION CONDITION"

Loading Conditions attached:

Description	Draft	Comments
Stage 1	22.00m	
Stage 2	21.00m	
Stage 3	20.00m	
Stage 4	19.00m	
Stage 5	18.00m	

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JOSE CARLOS FERNANDES DE OLIVEIRA
09/07/2010
DIRETORIA DE PROJETOS E DESenhos

9/6/14

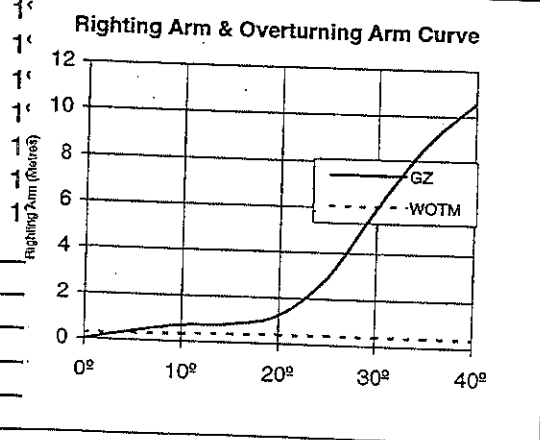
Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	%TCG from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	99° -0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	99° 0.0	4.4	0.000	0.000
SW Ballast 2P	877.6	1.025	99° 0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	99° 0.0	5.1	0.000	0.000
SW Ballast 3P	728.7	1.025	1° -3.5	39.0	0.000	0.000
SW Ballast 3S	728.7	1.025	1° 6.1	40.6	0.000	0.000
SW Ballast 4P	798.3	1.025	99° -0.1	27.7	0.000	0.001
SW Ballast 4S	798.3	1.025	99° 6.3	42.1	0.000	0.000
SW Ballast 5P	256.6	1.025	1° 4.3	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	1° 0.2	41.0	0.000	0.000
SW Ballast 6P	523.9	1.025	1° 8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	47° 5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	99° -11.7	43.7	0.004	0.013
SW Ballast 7S	555.2	1.025	1° 1.5	18.3	-	-
SW Ballast 11P	644.7	1.025	99° 0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	99° 2.8	15.1	-	-
SW Ballast 13P	644.7	1.025	99° 0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	99° 0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	1° 0.8	5.42	0.007	0.055
SW Ballast 16S	249.7	1.025	1°			
SW Ballast 17P	523.9	1.025	31° -0.025	22.11	0.012	0.069
SW Ballast 17S	523.9	1.025	1°			
SW Ballast 18P	555.2	1.025	99°			
SW Ballast 18S	555.2	1.025	99°			
SW Ballast 19P	728.8	1.025	1°			
SW Ballast 19S	728.8	1.025	1°			
SW Ballast 20P	768.2	1.025	1°			
SW Ballast 20S	768.2	1.025	92°			
SW Ballast 21P	963.7	1.025	1°			
SW Ballast 21S	963.7	1.025	1°			
SW Ballast 22P	1067.3	1.025	1°			
SW Ballast 22S	1067.3	1.025	1°			
SW Ballast 23P	665.6	1.025	1°			
SW Ballast 23S	665.6	1.025	1°			
SW Ballast 24P	980.8	1.025	1°			
SW Ballast 24S	980.8	1.025	1°			
SW Ballast 25P	665.6	1.025	1°			
SW Ballast 25S	665.6	1.025	1°			
SW Ballast 26P	980.8	1.025	1°			
SW Ballast 26S	980.8	1.025	1°			
SW Ballast Total						

Stability

Corrected VCG =	22.12 m	22.18 m
AT / KML =	26.80 m	27.20 m
AT / GML =	4.68 m	5.02 m

Stability Margin

Allowable VCG =	23.04 m
Stability Margin =	0.86 m



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JOSE CARLOS FERNANDES OLIVEIRA
Gerente
Divisão de Operações

14/3

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Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	%G m CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	99.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	99.0	4.4	0.000	0.000
SW Ballast 2P	877.6	1.025	20.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	99.0	5.1	0.000	0.000
SW Ballast 3P	728.7	1.025	1.5	39.0	0.000	0.000
SW Ballast 3S	728.7	1.025	1.1	40.6	0.000	0.000
SW Ballast 4P	798.3	1.025	99.1	27.7	0.000	0.001
SW Ballast 4S	798.3	1.025	99.3	42.1	0.000	0.000
SW Ballast 5P	256.6	1.025	1.3	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	1.2	41.0	0.000	0.000
SW Ballast 6P	523.9	1.025	1.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	47.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	99.1.7	43.7	0.004	0.013
SW Ballast 7S	555.2	1.025	1.5	18.3	-	-
SW Ballast 11P	644.7	1.025	99.0	9.8	-	-
SW Ballast 11S	644.7	1.025	99.8	15.1	-	-
SW Ballast 13P	644.7	1.025	99.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	99.0	0.0	-	-
SW Ballast 16P	249.7	1.025	1.0	5.35	0.008	0.032
SW Ballast 16S	249.7	1.025	1%			
SW Ballast 17P	523.9	1.025	1%010	22.58	0.013	0.045
SW Ballast 17S	523.9	1.025	1%			
SW Ballast 18P	555.2	1.025	99%			
SW Ballast 18S	555.2	1.025	99%			
SW Ballast 19P	728.8	1.025	1%			
SW Ballast 19S	728.8	1.025	1%			
SW Ballast 20P	768.2	1.025	1%			
SW Ballast 20S	768.2	1.025	1%			
SW Ballast 21P	963.7	1.025	1%			
SW Ballast 21S	963.7	1.025	1%			
SW Ballast 22P	1067.3	1.025	1%			
SW Ballast 22S	1067.3	1.025	1%			
SW Ballast 23P	665.6	1.025	1%			
SW Ballast 23S	665.6	1.025	1%			
SW Ballast 24P	980.8	1.025	1%			
SW Ballast 24S	980.8	1.025	1%			
SW Ballast 25P	665.6	1.025	1%			
SW Ballast 25S	665.6	1.025	1%			
SW Ballast 26P	980.8	1.025	1%			
SW Ballast 26S	980.8	1.025	1%			
SW Ballast Total						

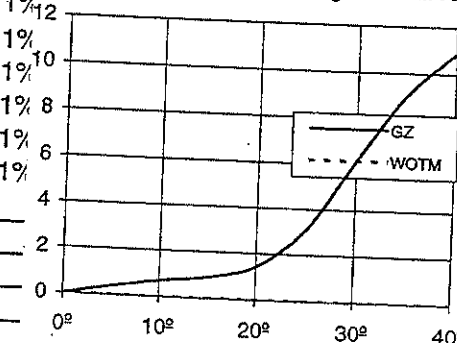
Cal Stability

ected VCG =	22.59 m	22.62 m
/ KML =	26.90 m	27.40 m
/ GML =	4.31 m	4.78 m

ility Margin

able VCG =	26.60 m
ility Margin =	3.98 m

Righting Arm & Overturning Arm Curve



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Sea Water Ballast Tanks	Max Vol. m ³	Density t/m ³	%	G m CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	99%	3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	99%	0	4.4	0.000	0.000
SW Ballast 2P	877.6	1.025	1%	2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	76%	0	5.1	0.000	0.000
SW Ballast 3P	728.7	1.025	1%	5	39.0	0.001	0.000
SW Ballast 3S	728.7	1.025	1%	1	40.6	0.000	0.000
SW Ballast 4P	798.3	1.025	99%	1	27.7	0.000	0.001
SW Ballast 4S	798.3	1.025	99%	3	42.1	0.000	0.000
SW Ballast 5P	256.6	1.025	1%	3	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	1%	2	41.0	0.000	0.000
SW Ballast 6P	523.9	1.025	1%	5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	5%	2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	99%	7	43.7	0.004	0.013
SW Ballast 7S	555.2	1.025	1%	5	18.3	-	-
SW Ballast 11P	644.7	1.025	99%	0	9.8	-	-
SW Ballast 11S	644.7	1.025	99%	8	15.1	-	-
SW Ballast 13P	644.7	1.025	99%	0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	99%	0	0.0	-	-
SW Ballast 16P	249.7	1.025	1%	1	5.11	0.012	0.052
SW Ballast 16S	249.7	1.025	1%				
SW Ballast 17P	523.9	1.025	1%	24	23.02	0.017	0.066
SW Ballast 17S	523.9	1.025	1%				
SW Ballast 18P	555.2	1.025	4%				
SW Ballast 18S	555.2	1.025	41%				
SW Ballast 19P	728.8	1.025	1%				
SW Ballast 19S	728.8	1.025	1%				
SW Ballast 20P	768.2	1.025	1%				
SW Ballast 20S	768.2	1.025	1%				
SW Ballast 21P	963.7	1.025	1%				
SW Ballast 21S	963.7	1.025	1%				
SW Ballast 22P	1067.3	1.025	1%				
SW Ballast 22S	1067.3	1.025	1%				
SW Ballast 23P	665.6	1.025	1%				
SW Ballast 23S	665.6	1.025	1%				
SW Ballast 24P	980.8	1.025	1%				
SW Ballast 24S	980.8	1.025	1%				
SW Ballast 25P	665.6	1.025	1%				
SW Ballast 25S	665.6	1.025	1%				
SW Ballast 26P	980.8	1.025	1%				
SW Ballast 26S	980.8	1.025	1%				
SW Ballast Total							

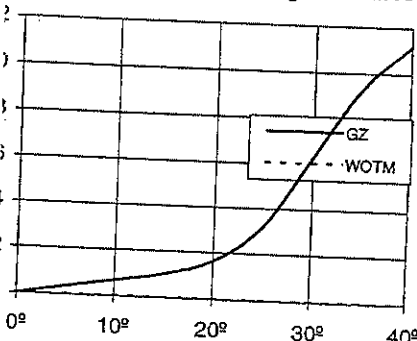
al Stability

ected VCG =	23.04 m	23.09 m
KML =	27.10 m	27.60 m
GML =	4.06 m	4.51 m

ity Margin

able VCG =	26.80 m
ity Margin =	3.71 m

Righting Arm & Overturning Arm Curve



É CÓPIA FIEL DO DOCUMENTO ORIGINAL

Prepared	BY	S
Checked		

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MA-3010.38-1320-915-NBD-909

983

Sea Water Ballast Tanks	Max Vol. m³	Density t/m³	%TCG from CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	99%-0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	99% 0.0	4.4	0.000	0.000
SW Ballast 2P	877.6	1.025	1% 0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	76% 0.0	5.1	0.000	0.000
SW Ballast 3P	728.7	1.025	1%-3.5	39.0	0.001	0.000
SW Ballast 3S	728.7	1.025	1% 6.1	40.6	0.000	0.000
SW Ballast 4P	798.3	1.025	99%-0.1	27.7	0.000	0.001
SW Ballast 4S	798.3	1.025	99% 6.3	42.1	0.000	0.000
SW Ballast 5P	256.6	1.025	1% 4.3	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	1% 0.2	41.0	0.000	0.000
SW Ballast 6P	523.9	1.025	1% 8.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	1% 5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	62% 11.7	43.7	0.005	0.013
SW Ballast 7S	555.2	1.025	1% 1.5	18.3	-	-
SW Ballast 11P	644.7	1.025	99% 0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	99% 2.8	15.1	-	-
SW Ballast 13P	644.7	1.025	99% 0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	99% 0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	1% 1.1	5.06	0.007	0.027
SW Ballast 16S	249.7	1.025	1%			
SW Ballast 17P	523.9	1.025	1% 0.035	23.17	0.012	0.041
SW Ballast 17S	523.9	1.025	1%			
SW Ballast 18P	555.2	1.025	1%			
SW Ballast 18S	555.2	1.025	1%			
SW Ballast 19P	728.8	1.025	1%			
SW Ballast 19S	728.8	1.025	1%			
SW Ballast 20P	768.2	1.025	1%			
SW Ballast 20S	768.2	1.025	1%			
SW Ballast 21P	963.7	1.025	1%			
SW Ballast 21S	963.7	1.025	1%			
SW Ballast 22P	1067.3	1.025	1%			
SW Ballast 22S	1067.3	1.025	1%			
SW Ballast 23P	665.6	1.025	1%			
SW Ballast 23S	665.6	1.025	1%			
SW Ballast 24P	980.8	1.025	1%			
SW Ballast 24S	980.8	1.025	1%			
SW Ballast 25P	665.6	1.025	1%			
SW Ballast 25S	665.6	1.025	1%			
SW Ballast 26P	980.8	1.025	1%			
SW Ballast 26S	980.8	1.025	1%			
SW Ballast Total						

1%ical Stability

1%

1%rected VCG =

23.19 m 23.22 m

1%T / KML =

27.10 m 27.60 m

1%T / GML =

3.91 m 4.38 m

1%

1%bility Margin

1%

1%wable VCG =

26.80 m

1%bility Margin =

3.58 m

1%

1%

1%

1%

1%

1%

1%

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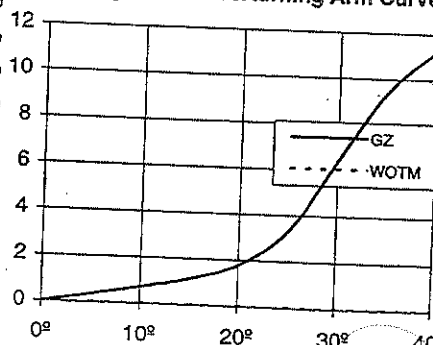
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Righting Arm & Overturning Arm Curve



Prepared

Checked

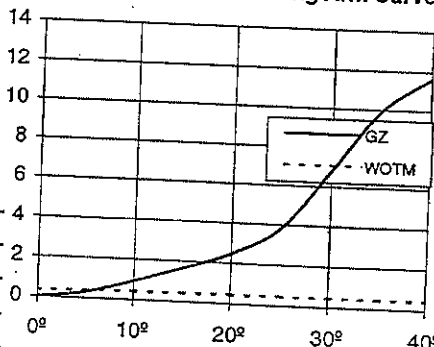
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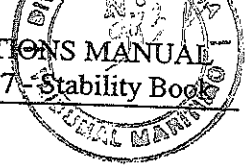
982
K

Sea Water Ballast Tanks	Max Vol. m ³	Density t/m ³	% CG om CL	VCG m	FSC _T m	FSC _L m
SW Ballast 1P	886.7	1.025	99% 0.3	29.7	0.000	0.000
SW Ballast 1S	886.7	1.025	99% 0.0	4.4	0.000	0.000
SW Ballast 2P	877.6	1.025	1% 0.2	26.4	0.000	0.000
SW Ballast 2S	877.6	1.025	76% 0.0	5.1	0.000	0.000
SW Ballast 3P	728.7	1.025	1% 3.5	39.0	0.001	0.000
SW Ballast 3S	728.7	1.025	1% 6.1	40.6	0.000	0.000
SW Ballast 4P	798.3	1.025	99% 0.1	27.7	0.000	0.001
SW Ballast 4S	798.3	1.025	99% 6.3	42.1	0.000	0.000
SW Ballast 5P	256.6	1.025	1% 4.3	37.7	0.000	0.000
SW Ballast 5S	256.6	1.025	1% 0.2	41.0	0.000	0.000
SW Ballast 6P	523.9	1.025	1% 3.5	43.9	0.000	0.000
SW Ballast 6S	523.9	1.025	1% 5.2	43.0	0.000	0.000
SW Ballast 7P	555.2	1.025	62% 1.7	43.7	0.005	0.014
SW Ballast 7S	555.2	1.025	1% 1.5	18.3	-	-
SW Ballast 11P	644.7	1.025	1% 0.0	9.8	-	-
SW Ballast 11S	644.7	1.025	1% 2.8	15.1	-	-
SW Ballast 13P	644.7	1.025	1% 0.0	0.0	0.000	0.000
SW Ballast 13S	644.7	1.025	5% 0.0	0.0	-	-
SW Ballast 16P	249.7	1.025	1% 1.9	5.33	0.012	0.041
SW Ballast 16S	249.7	1.025	1%			
SW Ballast 17P	523.9	1.025	1% .023	24.12	0.017	0.056
SW Ballast 17S	523.9	1.025	1%			
SW Ballast 18P	555.2	1.025	1% ical Stability			
SW Ballast 18S	555.2	1.025	1%			
SW Ballast 19P	728.8	1.025	1% ected VCG =	24.14 m	24.18 m	
SW Ballast 19S	728.8	1.025	1% / KML =	27.60 m	28.10 m	
SW Ballast 20P	768.2	1.025	1% / GML =	3.46 m	3.92 m	
SW Ballast 20S	768.2	1.025	1%			
SW Ballast 21P	963.7	1.025	1% ility Margin			
SW Ballast 21S	963.7	1.025	1%			
SW Ballast 22P	1067.3	1.025	1% wable VCG =	25.23 m		
SW Ballast 22S	1067.3	1.025	1% ility Margin =	1.05 m		
SW Ballast 23P	665.6	1.025	1%			
SW Ballast 23S	665.6	1.025	1%			
SW Ballast 24P	980.8	1.025	1%			
SW Ballast 24S	980.8	1.025	1%			
SW Ballast 25P	665.6	1.025	1%			
SW Ballast 25S	665.6	1.025	1%			
SW Ballast 26P	980.8	1.025	1%			
SW Ballast 26S	980.8	1.025	1%			
SW Ballast Total						

Righting Arm & Overturning Arm Curve



Prepared	BY	
Checked		



7.7 MAXIMUM ALLOWABLE V.C.G.

Attached:

Allowable VCG Curve for the Petrobras 36.

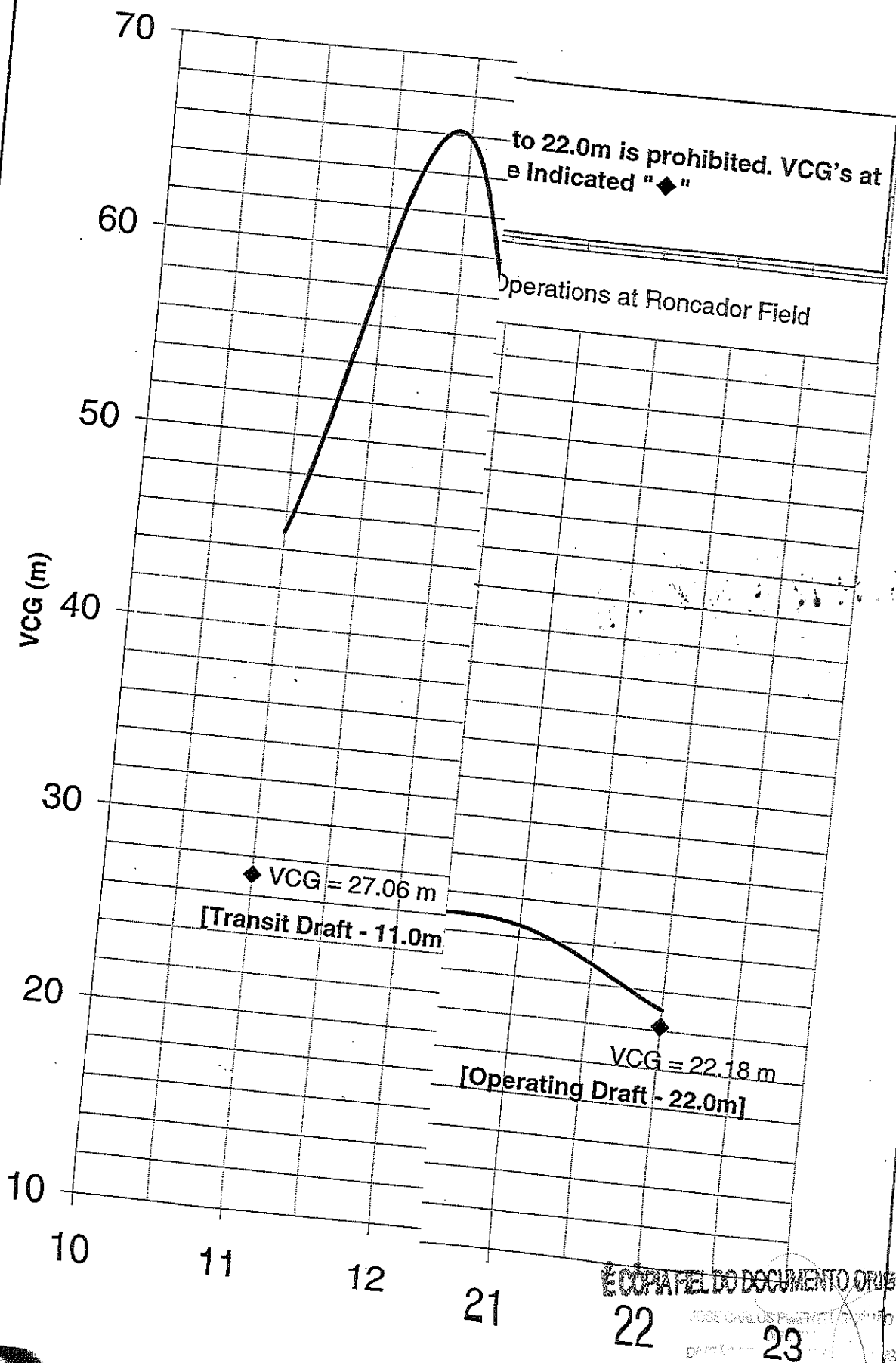
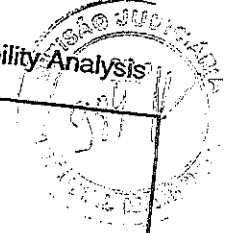
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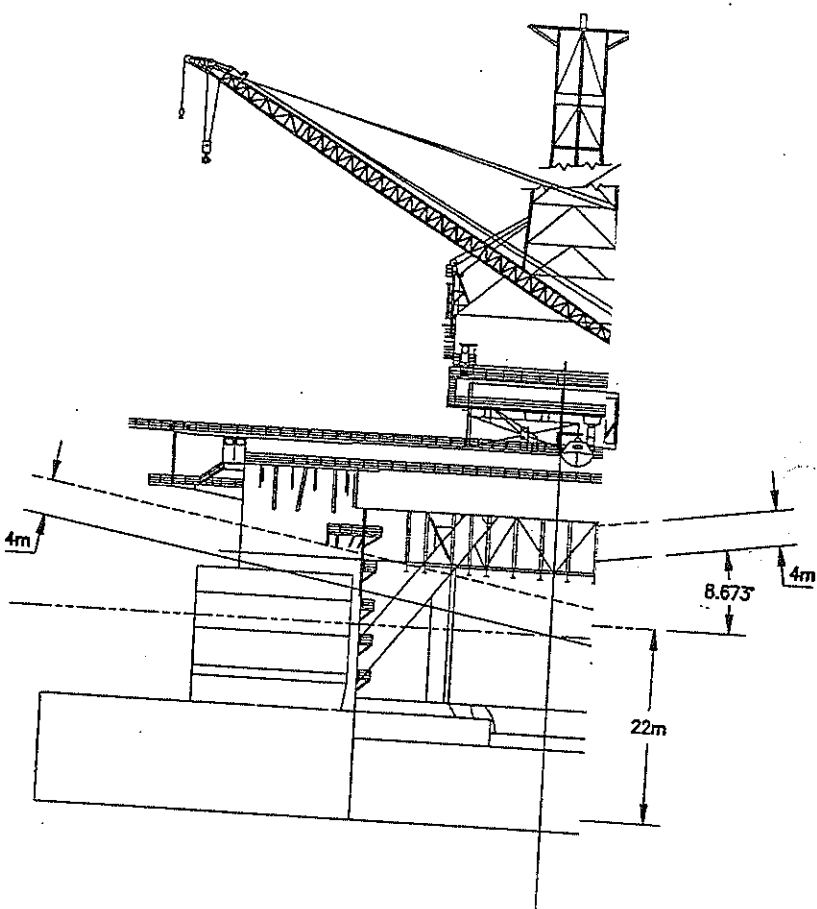
1. Operation outside the range 11.0m to 22.0m has not been approved by the Classification Society.
2. The Unit may remain at one of three drafts, 22.0m, 18.0m & 11.0m. All other drafts have been considered as temporary transition drafts only. The unit must not remain at temporary drafts without a Stability Analysis Approved by the Classification Society.
3. Allowable VCG at transition drafts is based upon the IMO criteria of $GM > 0.3m$.

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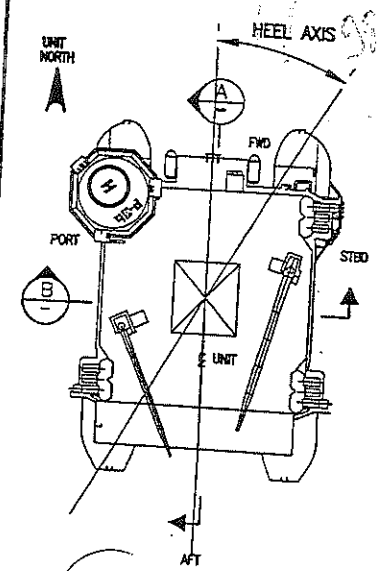
JOSE CARLOS LIMA
DIRETOR
DESENVOLVIMENTO





VIEW (A)

WORST CASE I
DAMAGE TO SW BA
 $T_{AMID} = 22.78m$ (AF)



GENERAL NOTES

1. BASED ON RESULTS FROM STABILITY ANALYSIS (DOC. No. RL-3010.38-1320-960-NBD-908) -REV B
2. DAMAGED CONDITIONS REPORTED ARE 'ACCIDENTAL FLOODING CASES'. THESE GIVE THE WORST ANGLE OF INCLINATION.

DRAWING NUMBER		DRAWING TITLE	
REFERENCE DRAWINGS			
C	25.01.99	A.F.D.	
B	3.12.97	REVISED A.F.D.	SCE MSE AT
A	28.11.97	A.F.D.	SCE MSE AT
D	17.9.97	I.D.C.	RHS AT AT
REV	ISSUE DATE	DESCRIPTION OF REVISION	TRAIN BY CHD BY APPD BY APPD CLIENT
BR BRASCO		P36-RONCADOR FIELD DEVELOPMENT	
NOBLE DENTON		CONTRACT No :- 7/15/2150	
Petromec		AMEC	
TITLE		DRAWN/DATE	
INCLINATION OF UNIT		SCE/NOV.97	
WORST DAMAGE		CHECKED/DATE	
CONDITION		MSE/ 24.3.99	
		APPROVED/DATE	
		AT/ 24.3.99	
		SCALE	
		N.T.S.	
DRAWING NUMBER		REV	
DE-3010.38-1320-941-NBD-368-01		C	

INCLINATION OF UNIT
WORST DAMAGE
CONDITION

7.8 CAPACITY PLANS

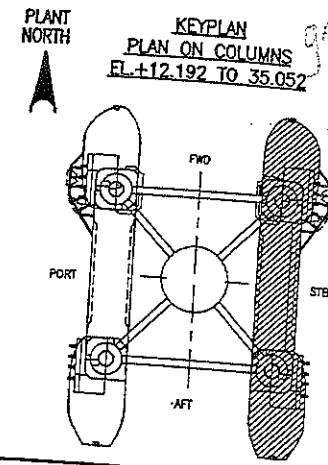
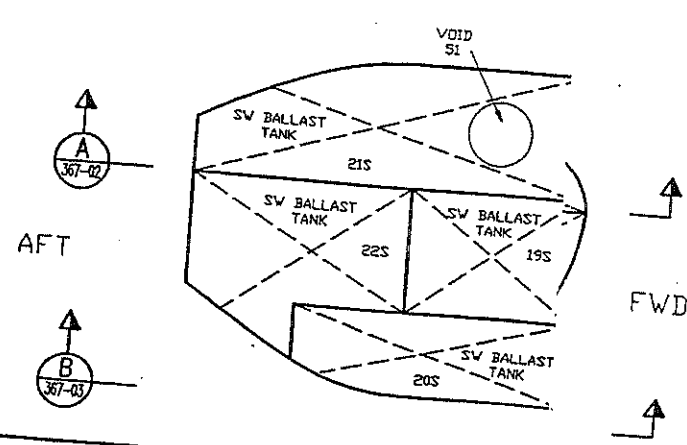
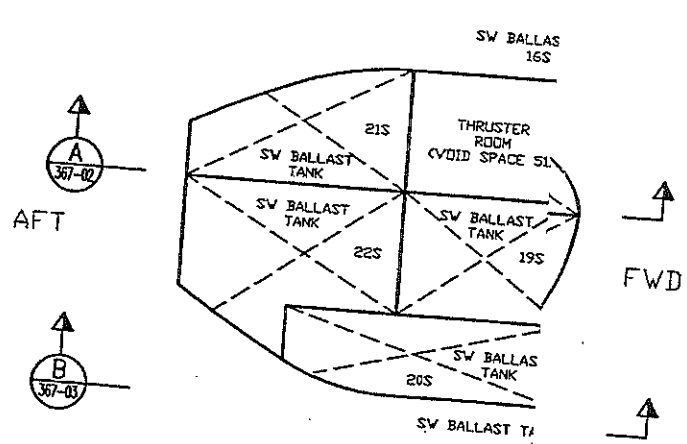
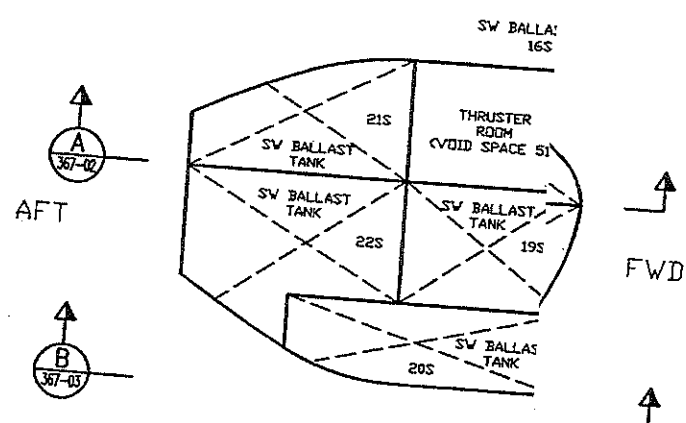
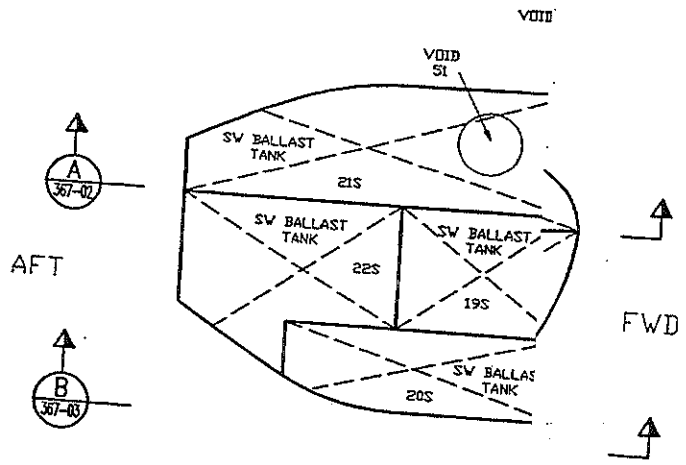
The following drawings are included:

GA of Pontoon Tanks & Spaces
GA of Pontoon Tanks & Spaces elevation
GA of Pontoon Tanks & Spaces elevation
GA of Pontoon Tanks & Spaces Columns
Central Caisson Tank Layout
Tank Capacity Tables
Tank Capacity Tables
GA of Double Bottom
GA Tank Top to U/S Main Deck
GA Main Deck & Above
Storage & Laydown Main Deck
Storage & Laydown Tank Top
Storage & Laydown Second Deck

DE-3010.38-1320-962-NBD-367-01
DE-3010.38-1320-962-NBD-367-02
DE-3010.38-1320-962-NBD-367-03
DE-3010.38-1320-962-NBD-367-04
DE-3010.38-1320-962-NBD-367-05
DE-3010.38-1320-962-NBD-367-06
DE-3010.38-1320-962-NBD-367-07
DE-3010.38-1320-962-NBD-367-08
DE-3010.38-1320-962-NBD-367-09
DE-3010.38-1320-962-NBD-367-10
DE-3010.38-1320-962-NBD-367-11
DE-3010.38-1320-962-NBD-367-12
DE-3010.38-1320-962-NBD-367-13

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DE CALOS FREITAS



DE-3010.38-1320-962-NBD-367-02	E.A. of PONTON TANKS & SPACES ELEV. SHT. 2
DE-3010.38-1320-962-NBD-367-03	E.A. of PONTON TANKS & SPACES ELEV. SHT. 3
DE-3010.38-1320-962-NBD-367-04	E.A. of COLUMNS & CAISSON TANKS & SPACES PLAN
DE-3010.38-1320-962-NBD-367-05	E.A. of PONTON TANKS & SPACES CAISSON EL. SHT. 4
DE-3010.38-1320-962-NBD-367-06	TANK CAPACITY TABLE SHT. 1
DE-3010.38-1320-962-NBD-367-07	TANK CAPACITY TABLE SHT. 2
DE-3010.38-1320-962-NBD-367-08	CAPACITY PLAN - DOUBLE BOTTOM
DE-3010.38-1320-962-NBD-367-09	CAPACITY PLAN - TANK TOP TO U.S. MAIN DECK
DE-3010.38-1320-962-NBD-367-10	CAPACITY PLAN - MAIN DECKING ABOVE
DE-3010.38-1320-962-NBD-367-11	STORAGE AND LAYDOWN AREAS AT MAIN DECK
DE-3010.38-1320-962-NBD-367-12	STORAGE AND LAYDOWN AREAS AT TANK TOP
DE-3010.38-1320-962-NBD-367-13	STORAGE AND LAYDOWN AREAS AT SECOND DECK

REV	DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECK BY	APPROVED BY	APPROVED CLIENT
E	22.11.99	AS BUILT				
D	01.09.99	REVISED AFC				
C	29.01.99	AFC				
B	12.12.97	REVISED AFD				
A	28.10.97	AFD				
0	11.9.97	IDC				

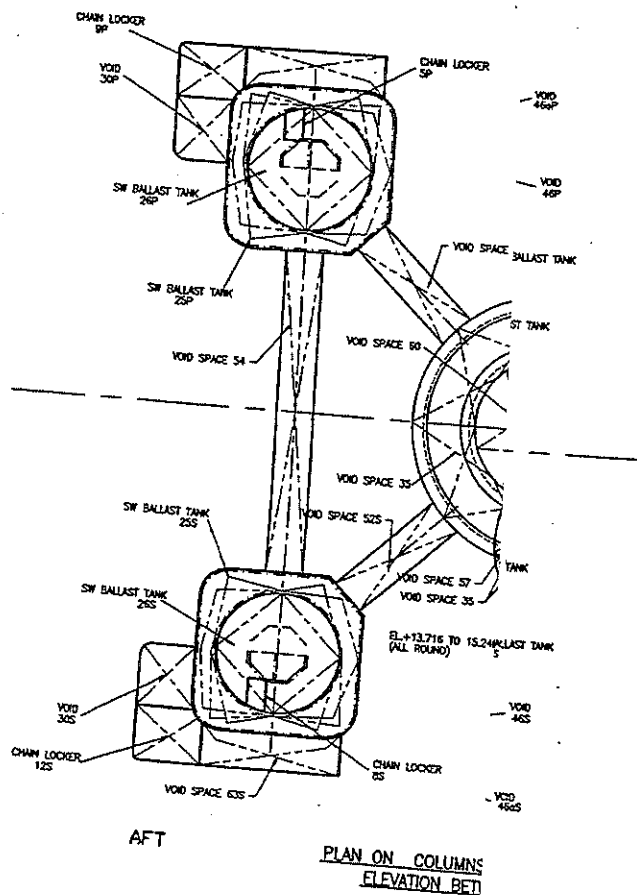
BR BRASON P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No. :- 7/15/2150

NOBLE DENTON **Petromec** **AMEC**

P36 RONCADOR
G.A. of PONTON
TANKS & SPACES
PLANS SHT.1

DATE: 01/09/99
SCE/DEC.97
CHECKED/DATE: MSE/NOV 99
APPROVED/DATE: MSE/NOV 99
SCALE: 1:200 (A1)

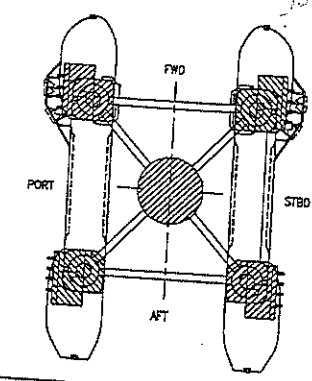
DRAWING NUMBER: DE-3010.38-1320-962-NBD-367-01
REV: E



PLAN ON COLUMNS
ELEVATION BET

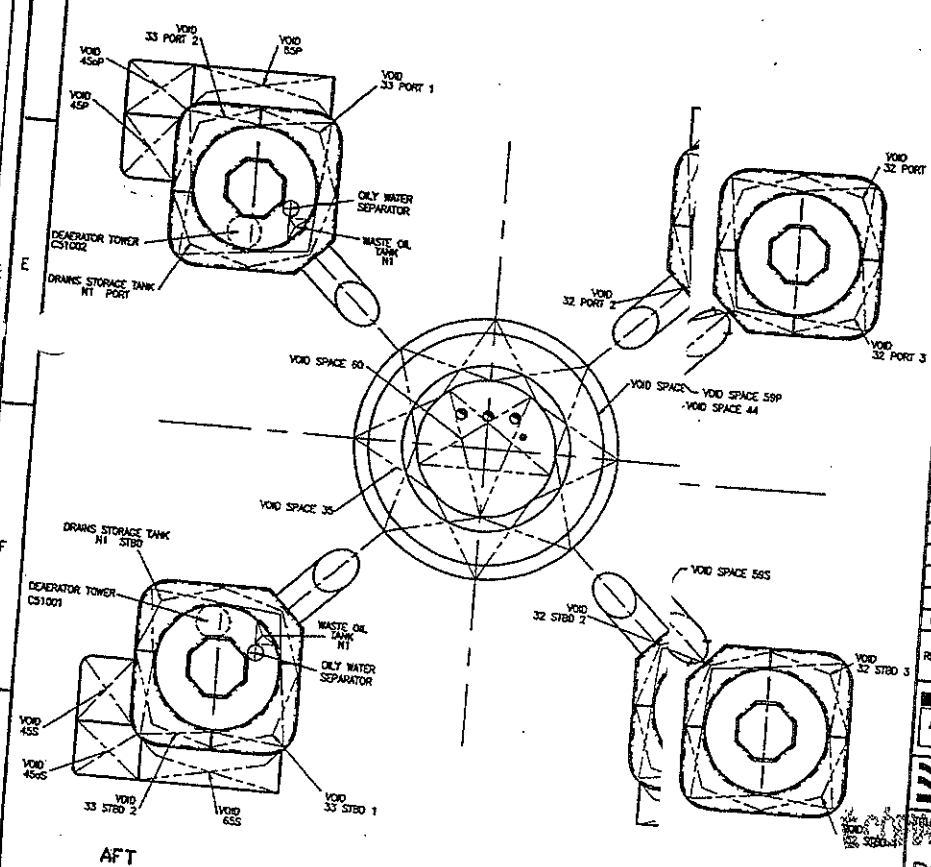
PLANT
NORTH

KEYPLAN
PLAN ON COLUMNS
EL.+12.192 TO 35.052



NOTES

1. FOR ELEVATIONS OF TANKS REFER TO SHEETS 24.3.



PLAN ON COLUMNS, BRACES AND CENTRE CAISSON
ELEVATION BETWEEN 19812 & 21336 ABL

ASSON
ZL

FWD

DE-3010.38-1320-962-NBD-367-11	G.A. OF PONTON TANKS & SPACES PLAN SHT.1
DE-3010.38-1320-962-NBD-367-12	G.A. OF PONTON TANKS & SPACES ELEV. SHT.2
DE-3010.38-1320-962-NBD-367-13	G.A. OF PONTON TANKS & SPACES ELEV. SHT.3
DE-3010.38-1320-962-NBD-367-14	G.A. OF PONTON TANKS & SPACES CAISSON EL. SHT.4
DE-3010.38-1320-962-NBD-367-15	TANK CAPACITY TABLE SHT. 1
DE-3010.38-1320-962-NBD-367-16	TANK CAPACITY TABLE SHT. 2
DE-3010.38-1320-962-NBD-367-17	CAPACITY PLAN - DECKLE BOTTOM
DE-3010.38-1320-962-NBD-367-18	CAPACITY PLAN - TANK TOP TO W/S MAIN DECK
DE-3010.38-1320-962-NBD-367-19	CAPACITY PLAN - MAIN DECK AND ABOVE
DE-3010.38-1320-962-NBD-367-20	STORAGE AND LAYDOWN AREAS AT MAIN DECK
DE-3010.38-1320-962-NBD-367-21	STORAGE AND LAYDOWN AREAS AT TANK TOP
DE-3010.38-1320-962-NBD-367-22	STORAGE AND LAYDOWN AREAS AT SECOND DECK

REV	ISSUE DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECKED BY	APPROVED BY	APPROVED CLIENT
E	02.10.99	AS BUILT				
D	01.09.99	REVISED A/C				
C	05.03.99	A/C				
B	10.12.97	REVISED A/C				
A	29.10.97	A/C				
0	11.5.97	IDC				

BR BRASON P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No :- 7/15/2150

NOBLE DENTON **Petromec** **AMDC**

P36 RONCADOR
G.A. of PONTON
TANKS & SPACES
COLUMN PLANS SHT.4

DRAWN/DATE
SCE/DEC.97

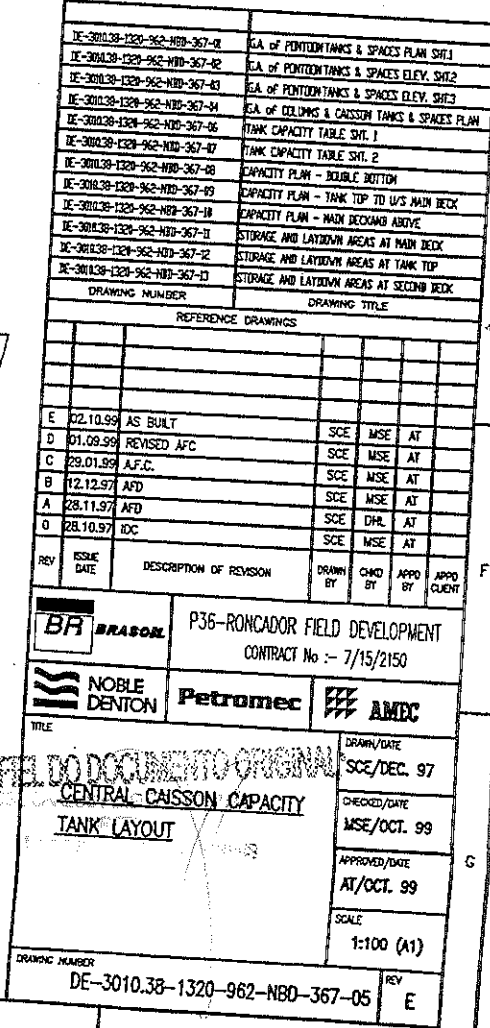
CHECKED/DATE
MSE/02 OCT.99

APPROVED/DATE
AT/02 OCT.99

SCALE
N.T.S.

DRAWING NUMBER
DE-3010.38-1320-962-NBD-367-04

REV
E



RECÓPIA FEL DO DOCUMENTO ORIGINAL

CENTRAL CAISSON CAPACITY

TANK LAYOUT

DRAWN/DATE
SCE/DEC. 97

CHECKED/DATE
MSE/OCT. 99

APPROVED/DATE
AT/OCT. 99

SCALE
1:100 (A1)

DRAWING NUMBER

DE-3010.38-1320-962-NBD-367-05

REV

POT TANKS	ID	Max Wt (M.T)	Volume (m3)	VCG (m)	Between Frame No.s
Pot Water Tk	1P	194.0	194.0	27.00	16 & 17
Pot Water Tk	1S	194.0	194.0	27.00	18 & 19
Pot Water Day Tk		15.2	15.2	27.00	16 & 17
Potable Water Tanks		403.1	403.1	43.92	22 & 23
				45.10	17 & 18
				43.94	14 & 15
				52.91	41 & 42
				52.91	42 & 43
				29.80	52 & 53
				37.08	36 & 37
				46.47	50 & 51

Drill Water Tanks (Process FW)	ID	Max Wt (M.T)	Volume (m3)	VCG (m)	Between Frame No.s
Drill Water Tanks	8P	276.5	276.5	28.48	
Drill Water Tanks	8S	276.5	276.5		
Drill Water Tanks	9P	248.7	248.7		
Drill Water Tanks	9S	248.7	248.7		
Drill Water Tanks	14P	272.3	272.3		
Drill Water Tanks	14S	272.3	272.3		
Drill Water Tanks	15P	260.3	260.3		
Drill Water Tanks	15S	260.3	260.3		
Drill Water Tanks (Process FW)		2115.5	2115.5		

Fuel Oil	ID	Max Wt (M.T)	Volume (m3)	VCG (m)	Between Frame No.s
FO Tank	10P	586.9	611.3	47.27	60 & 61
FO Tank	10S	586.9	611.3	47.34	60 & 61
FO Tank	12P	590.1	614.7	47.49	50 & 51
FO Tank	12S	590.1	614.7	19.81	42 & 43
FO Overflow	P	16.4	17.1	49.23	58 & 59
FO Overflow	S	15.1	15.8	49.24	58 & 59
Fuel Oil		2385.4	2452.0	49.25	58 & 59
				44.98	38 & 39
				37.74	40 & 41
				37.36	35 & 36
				37.52	33 & 34
				38.33	40 & 41
				38.33	36 & 37
				63.78	31 & 32
				63.78	31 & 32
				43.92	39 & 40
				45.38	37 & 38
				48.38	37 & 38
				45.96	41 & 42
				39.08	64 & 65
				38.55	64 & 65
				44.21	41 & 42
				46.10	37 & 38
				44.42	21 & 22
				20.00	37 & 38
				36.20	39 & 40
				46.92	36 & 37
				44.79	39 & 40
				48.23	17 & 18
				46.56	20 & 21
				48.86	52 & 53
				48.86	52 & 53
				43.00	37 & 38
				43.74	

Diesel Oils	ID	Max Wt (M.T)	Volume (m3)	VCG (m)	Between Frame No.s
DO Sludge	N1P	3.6	4.1	6.77	6 & 7
DO Sludge	N1S	3.6	4.1	6.77	6 & 7
DO Settle	N1P	105.5	121.2	6.21	4 & 5
DO Day Tk	N2P	110.7	127.2	6.21	4 & 5
DO Settle	N3S	73.5	84.5	6.16	10 & 11
DO Service	N4S	73.5	84.5	6.16	10 & 11
Diesel Oils		381.6	341.2	6.20	9 & 10
				6.20	9 & 10
				2.98	18 & 19
				2.98	18 & 19
				5.27	18 & 19
				5.27	18 & 19
				6.11	17 & 18
				6.11	17 & 18
				4.57	33 & 34
				4.57	33 & 34
				4.57	40 & 41
				4.57	40 & 41
				3.04	55 & 56
				3.04	55 & 56
				5.27	55 & 56
				5.27	55 & 56
				6.11	56 & 57
				6.11	56 & 57
				6.16	63 & 64
				6.16	63 & 64
				6.16	64 & 65
				6.16	64 & 65
				6.68	68 & 69
				6.68	68 & 69
				6.13	70 & 71
				6.13	70 & 71
				16.00	18 & 19
				16.00	18 & 19
				14.37	18 & 19
				14.37	18 & 19
				16.00	55 & 56
				16.00	55 & 56
				14.37	55 & 56
				14.37	55 & 56
				5.29	55 & 56
				5.29	18 & 19
				5.29	18 & 19
				5.29	18 & 19
				16.76	56 & 57
				16.76	17 & 18
				16.76	17 & 18
				16.76	56 & 57

Lub Oils	ID	Max Wt (M.T)	Volume (m3)	VCG (m)	Between Frame No.s
Drains Storage Tank Port	N1P	406.3	451.4	6.77	6 & 7
Drains Storage Tank Stbd	N1S	406.3	451.4	6.21	4 & 5
Waste Oil	N1P	19.2	19.2	6.21	4 & 5
Waste Oil	N1S	19.2	19.2	6.16	10 & 11
Air Compressors LO Storage	T6S101	0.3	0.3	6.16	10 & 11
Mooring Winch LO Storage	T6S105	0.3	0.3	6.20	9 & 10
Mooring Winch LO Storage	T6S106	0.3	0.3	6.20	9 & 10
Mooring Winch LO Storage	T6S107	0.3	0.3	2.98	18 & 19
Mooring Winch LO Storage	T6S108	0.3	0.3	2.98	18 & 19
Em. Gen. LO Storage	T6S109	0.5	0.3	5.27	18 & 19
WI Room LO Storage	T6S110	0.8	0.9	6.11	17 & 18
WI Room LO Storage	T6S111	0.8	0.9	6.11	17 & 18
Turbine Lube Oil Console C	UQ-122308	15.0	16.7	4.57	33 & 34
Turbine Lube Oil Console B	UQ-122306	15.0	16.7	4.57	33 & 34
Turbine Lube Oil Console A	UQ-122304	15.0	16.7	4.57	40 & 41
Lub Oils		900.1	995.7	4.57	40 & 41
				4.57	40 & 41
				3.04	55 & 56
				3.04	55 & 56
				5.27	55 & 56
				5.27	55 & 56
				6.11	56 & 57
				6.11	56 & 57
				6.16	63 & 64
				6.16	63 & 64
				6.16	64 & 65
				6.16	64 & 65
				6.68	68 & 69
				6.68	68 & 69
				6.13	70 & 71
				6.13	70 & 71
				16.00	18 & 19
				16.00	18 & 19
				14.37	18 & 19
				14.37	18 & 19
				16.00	55 & 56
				16.00	55 & 56
				14.37	55 & 56
				14.37	55 & 56
				5.29	55 & 56
				5.29	18 & 19
				5.29	18 & 19
				5.29	18 & 19
				16.76	56 & 57
				16.76	17 & 18
				16.76	17 & 18
				16.76	56 & 57

Miscellaneous Tanks	ID	Max Wt (M.T)	Volume (m3)	VCG (m)	Between Frame No.s
Bilge Holding Tank	P	5.3	5.27	6.77	6 & 7
Bilge Holding Tank	S	5.3	5.27	6.21	4 & 5
W.L.L. ring Drain Tank	P	2.8	2.80	6.21	4 & 5
W.L.L. ring Drain Tank	S	2.8	2.80	6.16	10 & 11
Decelerator Tower -Port	C-51001	38.0	37.96	6.20	9 & 10
Decelerator Tower -Starb	C-52001	38.0	37.96	6.20	9 & 10
Auxiliary Generator DO	GE-514001	1.0	1.15	2.98	18 & 19
Column Separator Tank	N1P	13.8	13.80	2.98	18 & 19
Column Separator Tank	N1S	13.8	13.80	5.27	18 & 19
Miscellaneous Tanks		120.7	120.8	6.11	17 & 18
				6.11	17 & 18
				4.57	33 & 34
				4.57	33 & 34
				4.57	40 & 41
				4.57	40 & 41
				3.04	55 & 56
				3.04	55 & 56
				5.27	55 & 56
				5.27	55 & 56
				6.11	56 & 57
				6.11	56 & 57
				6.16	63 & 64
				6.16	63 & 64
				6.16	64 & 65
				6.16	64 & 65
				6.68	68 & 69
				6.68	68 & 69
				6.13	70 & 71
				6.13	70 & 71
				16.00	18 & 19
				16.00	18 & 19
				14.37	18 & 19
				14.37	18 & 19
				16.00	55 & 56
				16.00	55 & 56
				14.37	55 & 56
				14.37	55 & 56
				5.29	55 & 56
				5.29	18 & 19
				5.29	18 & 19
				5.29	18 & 19
				16.76	56 & 57
				16.76	17 & 18
				16.76	17 & 18
				16.76	56 & 57

DE-3010.38-1320-962-NBD-367-01	G.A. of PONTOON TANKS & SPACES PLAN SHT.1					
DE-3010.38-1320-962-NBD-367-02	G.A. of PONTOON TANKS & SPACES ELEV. SHT.2					
DE-3010.38-1320-962-NBD-367-03	G.A. of PONTOON TANKS & SPACES ELEV. SHT.3					
DE-3010.38-1320-962-NBD-367-04	G.A. of COLLARS & CAISSON TANKS & SPACES PLAN					
DE-3010.38-1320-962-NBD-367-05	G.A. of PONTOON TANKS & SPACES CAISSON BL. SHT.5					
DE-3010.38-1320-962-NBD-367-07	TANK CAPACITY TABLE SHT. 2					
DE-3010.38-1320-962-NBD-367-08	CAPACITY PLAN - DOUBLE BOTTOM					
DE-3010.38-1320-962-NBD-367-09	CAPACITY PLAN - TANK TOP TO U/S MAIN DECK					
DE-3010.38-1320-962-NBD-367-10	CAPACITY PLAN - MAIN DECK AND ABOVE					
DE-3010.38-1320-962-NBD-367-11	STORAGE AND LAYDOWN AREAS AT MAIN DECK					
DE-3010.38-1320-962-NBD-367-12	STORAGE AND LAYDOWN AREAS AT TANK TOP					
DE-3010.38-1320-962-NBD-367-13	STORAGE AND LAYDOWN AREAS AT SECOND DECK					
DRAWING NUMBER						
DRAWING TITLE						
REFERENCE DRAWINGS						
E 02.10.99	AS BUILT	SCE	MSE	AT		
D 01.09.99	REVISED APC	SCE	MSE	AT		
C 05.03.99	APC	SCE	MSE	AT		
B 10.12.97	REVISED APC	SCE	MSE	AT		
A 28.10.97	APC	SCE	MSE	AT		
D 11.9.97	DC	RHS	MSE	AT		
REV	ISSUE DATE	DESCRIPTION OF REVISION	DRAWN BY	CHKD BY	APPD BY	APPD CLIENT
BR BRASOL P36-RONCADOR FIELD DEVELOPMENT CONTRACT No :- 7/15/2150 NOBLE DENTON Petroleum AMC						
P36 RONCADOR TANK CAPACITY TABLES DRAWN/DATE SCE/DEC.97 CHECKED/DATE MSE/OCT.99 APPROVED/DATE AT/OCT.99 SCALE N.T.S.						
DRAWING NUMBER						
DE-3010.38-1320-962-NBD-367-06						
REV E						

992

Helicopter & Laydown Areas	ID	Max Wt (M.T)	Area (m2)	Between Frame No.s
Helicopter	HD	24.0	623.1	
Tote Tank Laydown	LD-01	76.0	57.3	22 & 23
Misc Laydown 1	LD-02	75.0	56.6	22 & 23
Misc Laydown 2	LD-03	53.3	40.2	52 & 53
Compression A Laydown	LD-04	59.1	44.6	52 & 53
Compression B Laydown	LD-05	56.5	42.7	12 & 13
Compression C Laydown	LD-06	63.8	48.1	12 & 13
Turbine A Laydown	LD-07	19.9	15.0	18 & 19
Turbine B Laydown	LD-08	19.9	15.0	18 & 19
Turbine C Laydown	LD-09	19.9	15.0	61 & 62
Pig Launcher Laydown	LD-10	67.4	50.9	61 & 62
Multipurpose Court	LD-11	212.0	160.0	55 & 56
Helicopter & Laydown Areas		747.0		55 & 56

Crew & Stores Main Deck	ID	Max Wt (M.T)	Area (m2)	Between Frame No.s
Paint Locker	MD-01	27.8	21.0	52 & 53
Deck Locker	MD-02	27.8	21.0	58 & 59
Marine Equipment Storage	MD-03	45.9	34.7	58 & 59
Crew & Stores Main Deck		101.6	76.7	33 & 34

Crew & Stores Second Deck	ID	Max Wt (M.T)	Area (m2)	Between Frame No.s
Weld Shop	SD-01	124.7	94.1	61 & 62
Production Warehouse	SD-02	51.6	39.0	61 & 62
Warehouse	SD-03	149.9	113.1	12 & 13
Open Store	SD-04	108.4	81.8	12 & 13
Dry Store 1	SD-05	59.8	45.1	12 & 13
Dry Store 2	SD-06	45.9	34.6	12 & 13
Chilling Room / Freezer	SD-07	61.8	46.7	11 & 12
Crew & Effects		30.0		11 & 12
Crew & Stores Second Deck		632.1	454.4	62 & 63

Crew & Stores Tank Top	ID	Max Wt (M.T)	Area (m2)	Between Frame No.s
Pump Store Aft	TT-01	8.0	6.1	27 & 28
Pump Store Fwd	TT-02	8.0	6.1	27 & 28
Mech Store 1	TT-03	42.5	32.1	46 & 47
Mech Store 2	TT-04	31.0	23.4	37 & 38
Mech Workshop	TT-05	99.6	75.1	46 & 47
Production Warehouse	TT-06	51.4	38.8	18 & 19
Production Warehouse	TT-07	52.3	39.5	18 & 19
Store	TT-08	81.7	61.6	55 & 56
Electrical Workshop	TT-09	60.3	45.5	55 & 56
Electrical Store	TT-10	32.5	24.6	18 & 19
Hydraulic Workshop	TT-11	43.5	32.8	55 & 56
Central Coisson Laydown Area	TT-12	31.1	23.5	55 & 56
Starboard Forward Laydown Area	TT-13	5.5	6.0	61 & 62
Instrumentation Workshop	TT-14	19.8	21.6	12 & 13
	TT-15	61.3	46.3	12 & 13
Crew & Stores Tank Top		628.6	482.8	61 & 62

DE-3010.38-1320-962-NBD-367-01	P.A. of PONTOON TANKS & SPACES PLAN SHT.1
DE-3010.38-1320-962-NBD-367-02	P.A. of PONTOON TANKS & SPACES ELEV. SHT.2
DE-3010.38-1320-962-NBD-367-03	P.A. of PONTOON TANKS & SPACES ELEV. SHT.3
DE-3010.38-1320-962-NBD-367-04	P.A. of COLUMNS & CAISSON TANKS & SPACES PLAN
DE-3010.38-1320-962-NBD-367-05	P.A. of COLUMNS & CAISSON TANKS & SPACES ELEV. SHT.6
DE-3010.38-1320-962-NBD-367-07	TANK CAPACITY TABLE SHT. 2
DE-3010.38-1320-962-NBD-367-08	CAPACITY PLAN - DOUBLE BOTTOM
DE-3010.38-1320-962-NBD-367-09	CAPACITY PLAN - TANK TOP TO U/S MAIN DECK
DE-3010.38-1320-962-NBD-367-10	CAPACITY PLAN - MAIN DECK AND ABOVE
DE-3010.38-1320-962-NBD-367-11	STORAGE AND LAYDOWN AREAS AT TANK TOP
DE-3010.38-1320-962-NBD-367-12	STORAGE AND LAYDOWN AREAS AT MAIN DECK
DE-3010.38-1320-962-NBD-367-13	STORAGE AND LAYDOWN AREAS AT SECOND DECK

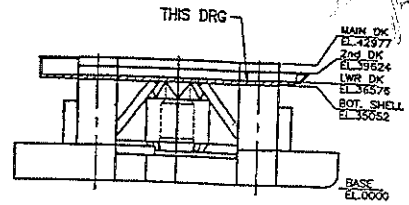
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REFERENCE DRAWINGS						
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D	01.09.99	REVISED AFC	SCE	MSE	AT	
C	05.03.99	AFC	SCE	MSE	AT	
B	01.12.97	REVISED AFD	SCE	MSE	AT	
A	28.10.97	AFD	SCE	MSE	AT	
O	11.9.97	IDC	RHS	MSE	AT	
REV	ISSUE DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECK BY	APPROV BY	APPROV CLIENT

BR BRASON P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No :- 7/15/2150

NOBLE DENTON **Petromec** **AMEC**

DATE	DRAWN/DATE
01.12.97	SCE/DEC.97
CHECKED/DATE	
MSE/OCT.97	
APPROVED/DATE	
AT/OCT.97	
SCALE	N.T.S.
DRAWING NUMBER	REV
DE-3010.38-1320-962-NBD-367-07	E

KEY PLAN



TANK TOP DECK SUMP
V-533605

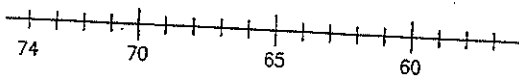
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F.O. C

D.O.

F.O. C

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DE-3010.38-1320-962-NB0-367-01	E.A. of PONTON TANKS & SPACES PLAN SHT.1
DE-3010.38-1320-962-NB0-367-02	E.A. of PONTON TANKS & SPACES ELEV. SHT.2
DE-3010.38-1320-962-NB0-367-03	E.A. of PONTON TANKS & SPACES ELEV. SHT.3
DE-3010.38-1320-962-NB0-367-04	E.A. of COLUMNS & CAISSON TANKS & SPACES PLAN
DE-3010.38-1320-962-NB0-367-05	E.A. of PONTON TANKS & SPACES CAISSON EL. SHT.6
DE-3010.38-1320-962-NB0-367-06	TANK CAPACITY TABLE SHT. 1
DE-3010.38-1320-962-NB0-367-07	TANK CAPACITY TABLE SHT. 2
DE-3010.38-1320-962-NB0-367-08	CAPACITY PLAN - TANK TOP TO U.S. MAIN DECK
DE-3010.38-1320-962-NB0-367-09	CAPACITY PLAN - MAIN DECK AND ABOVE
DE-3010.38-1320-962-NB0-367-10	STORAGE AND LAYDOWN AREAS AT MAIN DECK
DE-3010.38-1320-962-NB0-367-11	STORAGE AND LAYDOWN AREAS AT TANK TOP
DE-3010.38-1320-962-NB0-367-12	STORAGE AND LAYDOWN AREAS AT SECOND DECK

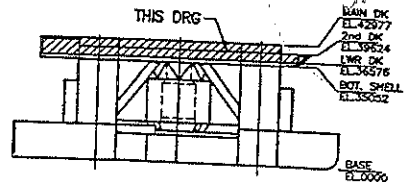
DRAWING NUMBER DRAWING TITLE

REFERENCE DRAWINGS

REV	ISSUE DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECK BY	APPROVED BY	CLIENT
B	02.10.99	AS BUILT				
A	01.09.99	A.F.C.				

BR BRASON P36-RONCADOR FIELD DEVELOPMENT CONTRACT No :- 7/15/2150		NOBLE DENTON CAPACITY PLAN DOUBLE BOTTOM EL.+35052 - EL.+3576 A.B.L.		Petromec DRAWN/DATE SCE/AUG.99 CHECKED/DATE MSE/OCT.99 APPROVED/DATE AT/OCT.99 SCALE 1:200		AMEC DRAWING NUMBER DE-3010.38-1320-962-NB0-367-08 REV B	
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KEY PLAN



RAIN DK
EL 42977
2nd DK
EL 39524
LWR DK
EL 36576
BOT. SHELL
EL 35052

BASE
EL 00000

A

B

C

D

3

F

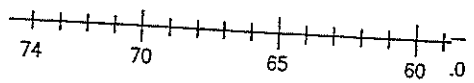
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DE-3001.38-1229-962-H09-367-08	SEA OF PONTON TANKS & SPACES PLAN SH1.1
DE-3001.38-1229-962-H09-367-02	SEA OF PONTON TANKS & SPACES ELEV. SH1.2
DE-3001.38-1229-962-H09-367-03	SEA OF PONTON TANKS & SPACES ELEV. SH1.3
DE-3001.38-1229-962-H09-367-04	SEA OF COLUMNS & CAISSON TANKS & SPACES PLAN
DE-3001.38-1229-962-H09-367-05	SEA OF PONTON TANKS & SPACES CAISSON EL. SH1.6
DE-3001.38-1229-962-H09-367-06	TANK CAPACITY TABLE SH1.7
DE-3001.38-1229-962-H09-367-07	TANK CAPACITY TABLE SH1.8
DE-3001.38-1229-962-H09-367-08	CAPACITY PLAN - DOUBLE BOTTOM
DE-3001.38-1229-962-H09-367-09	CAPACITY PLAN - MAIN DECK ABOVE
DE-3001.38-1229-962-H09-367-11	STORAGE AND LAYDOWN AREAS AT MAIN DECK
DE-3001.38-1229-962-H09-367-12	STORAGE AND LAYDOWN AREAS AT SECOND DECK
DE-3001.38-1229-962-H09-367-13	STORAGE AND LAYDOWN AREAS AT TANK TOP

DRAWING NUMBER		DRAWING TITLE							
REFERENCE DRAWINGS									
A	02.10.99	AS BUILT				SCE	MSE	AT	
O	01.09.99	A.F.C.				SCE	MSE	MSE	
REV	ISSUE DATE	DESCRIPTION OF REVISION				DRAWN BY	CHECK BY	APPROV BY	APPROV CHECK

 BRASON	P36-RONCADOR FIELD DEVELOPMENT CONTRACT No :- 7/15/2150	
 NOBLE DENTON	Petromec	 AMEC

TITLE	DRAWN/DATE
CAPACITY PLAN TANK TOP TO U/S MAIN DECK EL+36576 - EL+42977 A.B.L.	SCE/AUG.99 CHECKED/DATE MSE/OCT.99 APPROVED/DATE AT/OCT.99
DRAWING NUMBER	SCALE
DE-3010.38-1320-962-NBD-367-09	1:200
	REV A

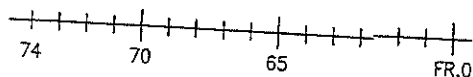


EXPANDED TO DISSEMINATE ORIGINAL
CAPACITY PLAN

TANK TOP TO U/S MAIN DECK
EL+36576 - EL+42977 ARI

DRAWING NUMBER
DE-3010.38-1320-962-NBD-367-05

10

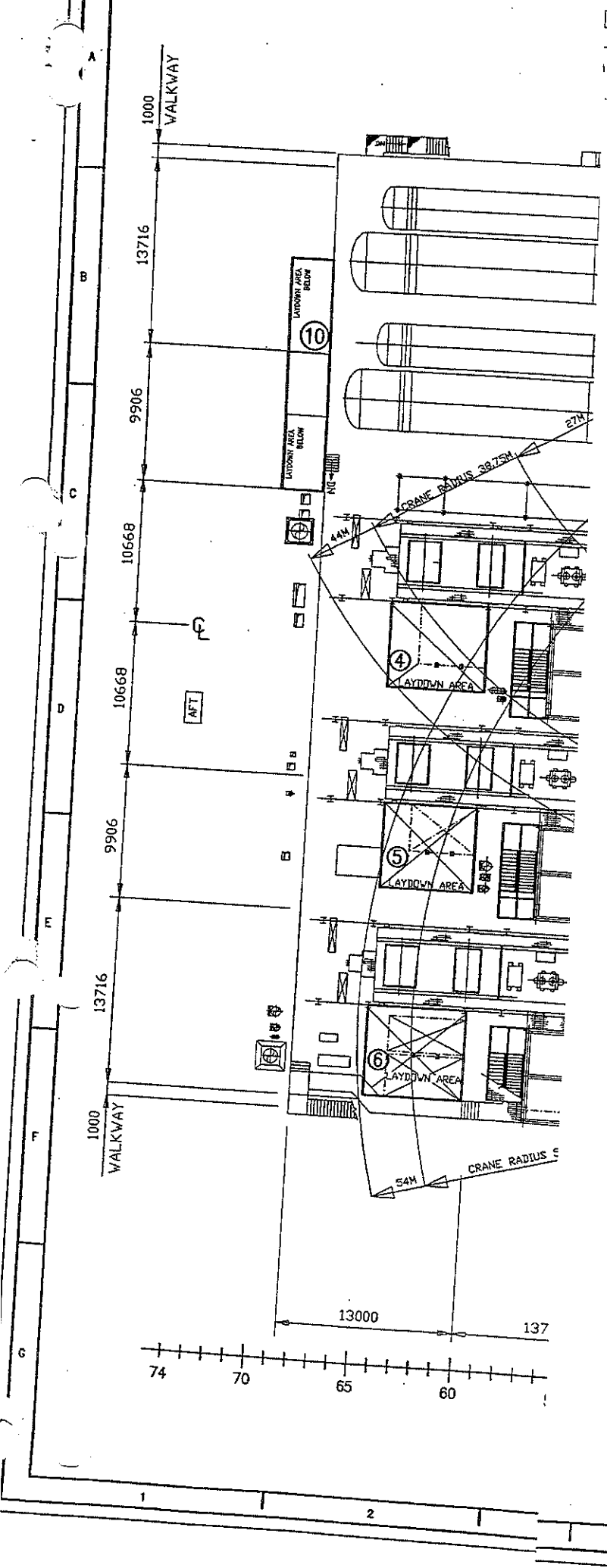


DE-3000-38-1320-962-N000-367-08	GA OF PONTON TANKS & SPACES PLAN SHT.1
DE-3000-38-1320-962-N000-367-82	GA OF PONTON TANKS & SPACES ELEV. SHT.2
DE-3000-38-1320-962-N000-367-43	GA OF PONTON TANKS & SPACES ELEV. SHT.3
DE-3000-38-1320-962-N000-367-04	GA OF COLUMNS & CAISSON TANKS & SPACES PLAN
DE-3000-38-1320-962-N000-367-45	GA OF PONTON TANKS & SPACES CAISSON EL. SHT.6
DE-3000-38-1320-962-N000-367-16	TANK CAPACITY TABLE SHT. 1
DE-3000-38-1320-962-N000-367-07	TANK CAPACITY TABLE SHT. 2
DE-3000-38-1320-962-N000-367-98	CAPACITY PLAN - MOBILE BUOY
DE-3000-38-1320-962-N000-367-09	CAPACITY PLAN - TANK TOP TO U/S MAIN DECK
DE-3000-38-1320-962-N000-367-11	STORAGE AND LAYDOWN AREAS AT MAIN DECK
DE-3000-38-1320-962-N000-367-12	STORAGE AND LAYDOWN AREAS AT TANK TOP
DE-3000-38-1320-962-N000-367-13	STORAGE AND LAYDOWN AREAS AT SECOND DECK
DRAWING NUMBER	DRAWING TITLE

[illegible]

 BRASCO	P36-RONCADOR FIELD DEVELOPMENT CONTRACT No. - 7/15/2150	
 NOBLE DENTON	Petromec	 AMEC
ORIGINAL TO DOCUMENT		
CAPACITY PLANT MAIN DECK AND ABOVE EL.+42877 A.B.L AND UPWARDS DRAWING NUMBER DE-3010.38-1320-962-NBD-367-10	REVISION/DATE SCE/AUG.99	
	CHECKED/DATE MSE/OCT.99	
	APPROVED/DATE AT/OCT.99	
	SCALE 1:200	
REV A		

FWD
INT NORTH



1	TOTE TANK LAYDOWN	57.14	AS	57.14
2	MISC LAYDOWN 1	10.07	S	10.07
3	MISC LAYDOWN 2	43.00	EL	43.00
4	COMPRESSION A LAYDOWN	75.0	AS	75.0
5	COMPRESSION B LAYDOWN	53.2	S	53.2
6	COMPRESSION C LAYDOWN	38.55	EL	38.55
7	TURBINE A LAYDOWN	-3.52	AS	-3.52
8	TURBINE B LAYDOWN	43.00	S	43.00
9	TURBINE C LAYDOWN	43.00	EL	43.00
10	COMPRESSION A LAYDOWN	59.1	AS	59.1
11	COMPRESSION B LAYDOWN	56.5	S	56.5
12	COMPRESSION C LAYDOWN	63.8	EL	63.8
13	TURBINE A LAYDOWN	19.9	AS	19.9
14	TURBINE B LAYDOWN	19.9	S	19.9
15	TURBINE C LAYDOWN	19.9	EL	19.9
16	PIG LAUNCHER LAYDOWN	67.4	AS	67.4
17	MULTIPURPOSE COURT	212.0	S	212.0
18	HELIDECK	24.0	EL	24.0
19	PAINT LOCKER	27.83	AS	27.83
20	DECK LOCKER	27.83	S	27.83
21	RISER PULL-IN EQUIP. STORAGE AREA	45.94	EL	45.94
22	TOTAL	848.4	AS	848.4

DE-3010.38-1320-962-NBD-367-01	SEA OF PONTON TANKS & SPACES PLAN SHIT.1
DE-3010.38-1320-962-NBD-367-02	SEA OF PONTON TANKS & SPACES ELEV. SHIT.2
DE-3010.38-1320-962-NBD-367-03	SEA OF PONTON TANKS & SPACES ELEV. SHIT.3
DE-3010.38-1320-962-NBD-367-04	SEA OF COLUMNS & CAISSON TANKS & SPACES PLAN
DE-3010.38-1320-962-NBD-367-05	SEA OF PONTON TANKS & SPACES CAISSON ELEV. SHIT.6
DE-3010.38-1320-962-NBD-367-06	TANK CAPACITY TABLE SHIT.1
DE-3010.38-1320-962-NBD-367-07	TANK CAPACITY TABLE SHIT.2
DE-3010.38-1320-962-NBD-367-08	CAPACITY PLAN - DOUBLE BOTTOM
DE-3010.38-1320-962-NBD-367-09	CAPACITY PLAN - TANK TOP TO U/S MAIN DECK
DE-3010.38-1320-962-NBD-367-10	CAPACITY PLAN - MAIN DECK ABOVE
DE-3010.38-1320-962-NBD-367-11	STORAGE AND LAYDOWN AREAS AT TANK TOP
DE-3010.38-1320-962-NBD-367-12	STORAGE AND LAYDOWN AREAS AT SECOND DECK

REV	DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECKED BY	APPROVED BY	CLIENT
A	02.10.99	AS BUILT				
B	01.09.99	A.F.C.				

BR BRASON P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No :- 7/15/2150

NOBLE DENTON **Petromec** **AMEC**

TITLE: STORAGE & LAYDOWN AREAS
@ MAIN DECK LEVEL
EL. 42.672 A.B.L.

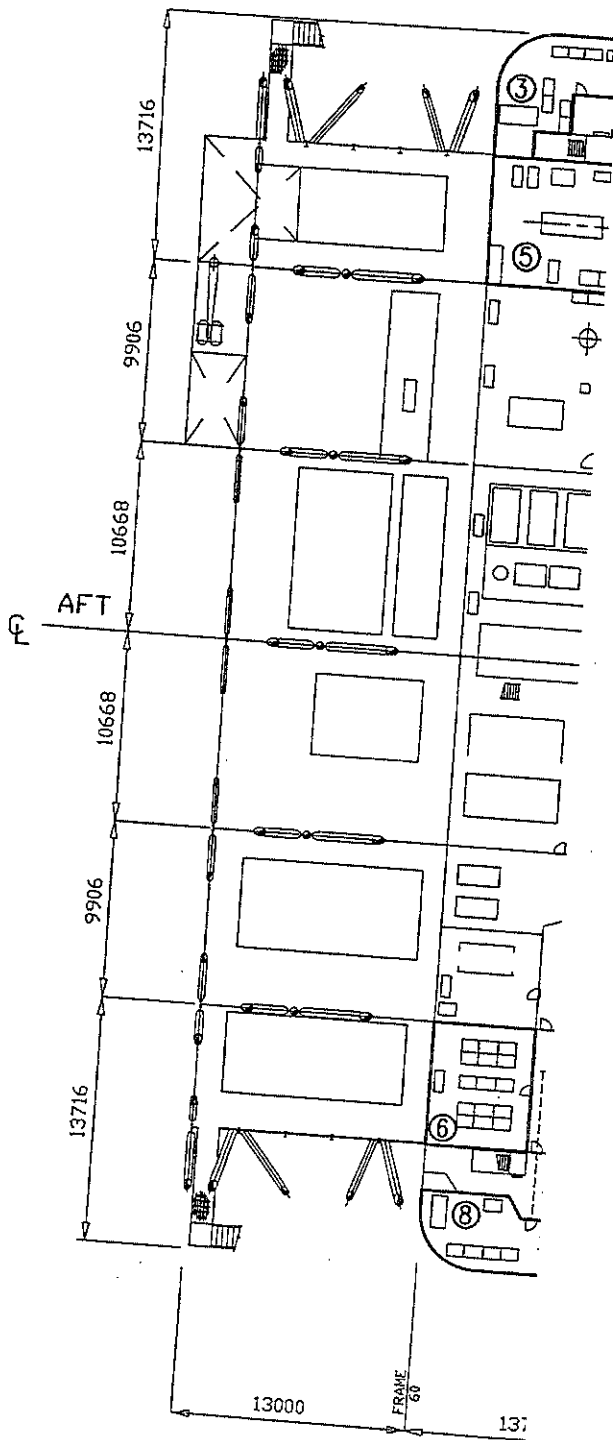
DATE: 08/AUG.99
CHECKED/DATE: MSE/OCT.99
APPROVED/DATE: AT/OCT.99
SCALE: 1:200

DRAWING NUMBER: DE-3010.38-1320-962-NBD-367-11
REV: A

COPIA DO DOCUMENTO ORIGINAL



NORTH



AREA No.	DESCRIPTION	MAX WL (ft)	CENTROID
1	PUMP STORE AFT	8.04	A 63.51 S 9.85 EL 37.88
2	PUMP STORE FWD	8.04	A 49.26 S 9.85 EL 37.88
3	MECH STORE 1	42.48	A 88.40 S 31.10 EL 37.88
4	MECH STORE 2	30.96	A 81.40 S 32.18 EL 37.88
5	MECH WORKSHOP	99.56	A 85.97 S 23.86 EL 37.58
6	PRODUCTION WAREHOUSE	51.42	A 88.61 S 24.15 EL 37.58
7	PRODUCTION WAREHOUSE	52.31	A 80.51 S 24.00 EL 37.58
8	STORE	81.68	A 82.90 S 31.44 EL 37.88
9	STORE	60.34	A 69.19 S 5.33 EL 37.88
10	ELECTRICAL WORKSHOP	32.54	A 75.27 S 8.16 EL 37.78
11	ELECTRICAL STORE	43.51	A 75.27 S 1.02 EL 37.78
12	HYDRAULIC WORKSHOP	31.14	A 75.37 S 4.83 EL 37.68
13	CENTRAL CAISSON LAYDOWN AREA	5.50	A 61.89 S 2.75 EL 37.58
14	STARBOARD FORWARD LAYDOWN AREA	19.80	A 37.67 S 22.62 EL 37.58
15	INSTRUMENTATION WORKSHOP	51.29	A 73.19 S 23.30 EL 37.58
	TOTAL	628.61	A 78.11 S 3.04 EL 37.72

DE-3010.38-1320-962-NB0-367-01	GA. OF PONTON TANKS & SPACES PLAN SHT.1
DE-3010.38-1320-962-NB0-367-02	GA. OF PONTON TANKS & SPACES ELEV. SHT.2
DE-3010.38-1320-962-NB0-367-03	GA. OF PONTON TANKS & SPACES ELEV. SHT.3
DE-3010.38-1320-962-NB0-367-04	GA. OF COLUMNS & CAISSON TANKS & SPACES PLAN
DE-3010.38-1320-962-NB0-367-05	GA. OF PONTON TANKS & SPACES CAISSON EL. SHT.6
DE-3010.38-1320-962-NB0-367-06	TANK CAPACITY TABLE SHT. 1
DE-3010.38-1320-962-NB0-367-07	TANK CAPACITY TABLE SHT. 2
DE-3010.38-1320-962-NB0-367-08	CAPACITY PLAN - DOUBLE BUTTON
DE-3010.38-1320-962-NB0-367-09	CAPACITY PLAN - TANK TOP TO U/S MAIN DECK
DE-3010.38-1320-962-NB0-367-10	CAPACITY PLAN - MAIN DECK AND ABOVE
DE-3010.38-1320-962-NB0-367-11	STORAGE AND LAYDOWN AREAS AT MAIN DECK
DE-3010.38-1320-962-NB0-367-12	STORAGE AND LAYDOWN AREAS AT SECOND DECK

DRAWING NUMBER

DRAWING TITLE

REFERENCE DRAWINGS

A	02.10.99	AS BUILT				
D	01.09.99	A.F.C.	SCE	MSE	AT	
			SCE	MSE	MSE	
REV	ISSUE DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECK BY	APPROVED BY	APPROVAL CLIENT

BR BRASON P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No :- 7/15/2150

NOBLE DEVOTON **Petromec** **AMEC**

STORAGE & LAYDOWN AREAS
TANK TOP LEVEL

EL. 36.576 A.B.L.

SCE/AUG.99

CHECKED/DATE
MSE/OCT 99

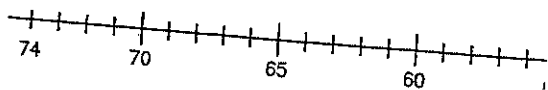
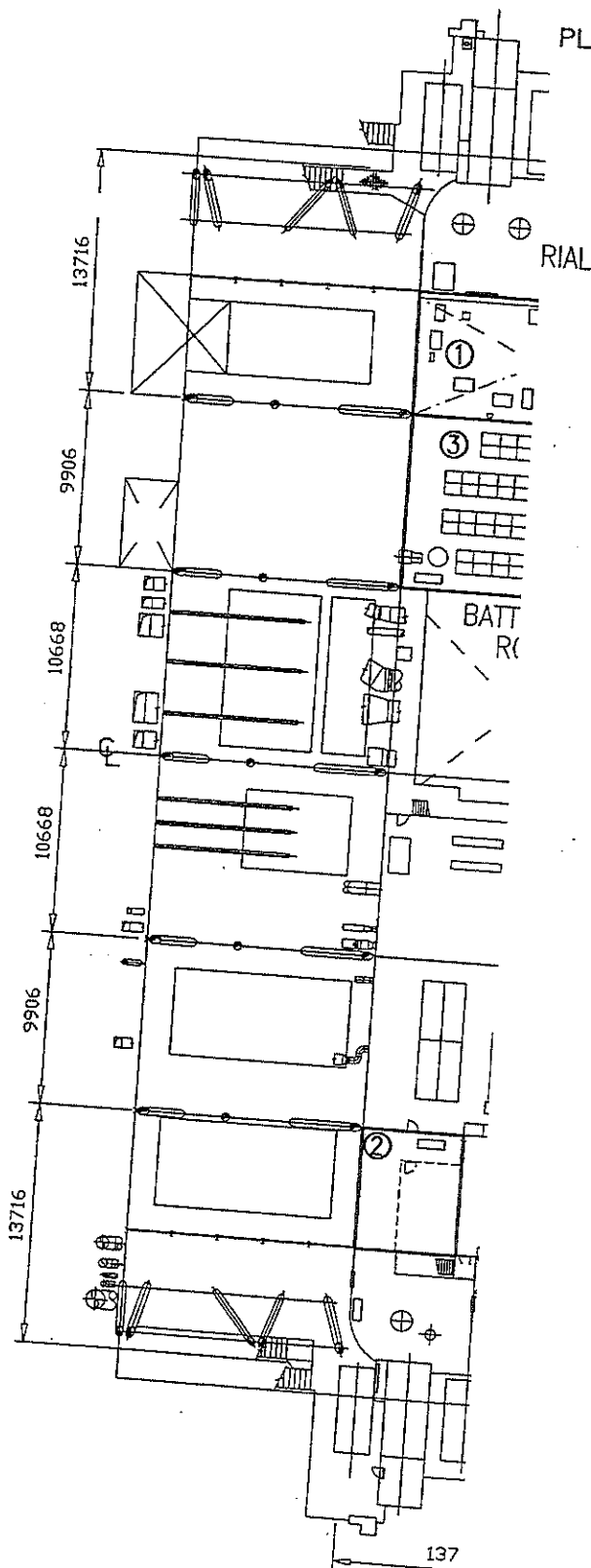
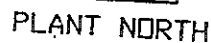
APPROVED/DATE
AT/OCT 99

SCALE
1:200

DRAWING NUMBER

DE-3010.38-1320-962-NB0-367-12

REV
A



AREA No.	DESCRIPTION	MAX. WT. (T)	CENTROID
1	WELD SHOP	124.65	84.58 -24.00 40.62
2	PRODUCTION WAREHOUSE	51.65	88.80 24.00 41.12
3	WAREHOUSE	149.86	85.73 -15.62 41.12
4	OPEN STORE	108.44	69.43 -0.23 41.02
5	DRY STORE 1	59.78	40.21 8.48 40.52
6	DRY STORE 2	45.92	37.21 15.03 40.52
7	CHILLING ROOM/ FREEZER	61.84	42.47 15.03 41.03
	CREW & EFFECTS	3.06	45.72 0.00 41.62
	TOTAL	605.19	70.02 -3.29 40.89

DE-300138-1329-962-NHD-367-01	SEA OF PONTIQUANTANKS & SPACES PLAIN SHITJ
DE-300138-1329-962-NHD-367-02	SEA OF PONTIQUANTANKS & SPACES ELEV. SHITJ
DE-300138-1329-962-NHD-367-03	SEA OF PONTIQUANTANKS & SPACES ELEV. SHITJ
DE-300138-1329-962-NHD-367-04	SEA OF COLUMBUS & CAISSON TANKS & SPACES PLAIN
DE-300138-1329-962-NHD-367-05	SEA OF PONTIQUANTANKS & SPACES CAISSON ELEV. SHITJ
DE-300138-1329-962-NHD-367-06	TANK CAPACITY TABLE SHIT. 1
DE-300138-1329-962-NHD-367-07	TANK CAPACITY TABLE SHIT. 2
DE-300138-1329-962-NHD-367-08	CAPACITY PLAN - DOUBLE BOTTOM
DE-300138-1329-962-NHD-367-09	CAPACITY PLAN - TANK TOP TO US MAIN DECK
DE-300138-1329-962-NHD-367-10	CAPACITY PLAN - MAIN DECKWARD ABOVE
DE-300138-1329-962-NHD-367-11	STORAGE AND LAYDOWN AREAS AT MAIN DECK
DE-300138-1329-962-NHD-367-12	STORAGE AND LAYDOWN AREAS AT TANK TOP
DRAWING NUMBER	DRAWING TITLE

REFERENCE DRAWINGS									
A	29.09.99	AS BUILT			SCE	MSE	JAT		
C	01.09.99	A.F.C.			SCE	MSE	MSE		
REV	ISSUE DATE	DESCRIPTION OF REVISION			DRAWN BY	CHECKED BY	APPROVED BY	DATE	CLIENT

BR	BRASON	P36-RONCADOR FIELD DEVELOPMENT	
NOBLE DENTON		Petromec	AMEC
STORAGE & LAYDOWN AREAS • SECOND DECK LEVEL		DATE SCE/AUG.99	
EL. 39.624 A.B.L.		CHECKED/DATE NWE/OCT 99	
DRAWING NUMBER DE-3010.38-1320-962-NBD-367-13		APPROVED/DATE AT/OCT 99	
		SCALE 1:200	
		REV A	

7.9 HYDROSTATIC DATA

Hydrostatic Data is attached for the range 10.0m to 25.0m along with the Hydrostatic Curves Plan

É CÓPIA FEL DO DOCUMENTO ORIGINAL

PROJ. CIVILS FUND. 07/10
DESENHO
07/10/10

Detailed Hydrostatics 10.0m to 25.0m

DRAFT	VOLUME	Δ	LCB	TCB	VCB	WPA	LCF	TCF	KMT	KML	MCT [*]	MCH [*]	TPC	Allow	Stability Condition
(m)	(m ³)	(tonnes)	(m)	(m)	(m)	(m ²)	(m)	(m)	(m)	(m)	(m-cm)	(m-cm)	(t)	(m)	
10.0m	33473	34310	-0.68	-0.02	4.95	2618	-2.27	-0.02	73.1	111.5	3.04	4.41	26.3	72.80	Temporary
10.1m	33735	34579	-0.70	-0.02	4.98	2618	-2.27	-0.02	72.6	110.7	3.07	4.45	26.3	72.30	Temporary
10.2m	33997	34847	-0.71	-0.02	5.02	2618	-2.27	-0.02	72.1	110	3.09	4.48	26.3	71.80	Temporary
10.3m	34259	35115	-0.72	-0.02	5.06	2618	-2.27	-0.02	71.6	109.2	3.11	4.52	26.3	71.30	Temporary
10.4m	34520	35383	-0.73	-0.02	5.10	2618	-2.27	-0.02	71.2	108.5	3.14	4.55	26.3	70.90	Temporary
10.5m	34782	35652	-0.74	-0.02	5.14	2618	-2.27	-0.02	70.7	107.7	3.16	4.59	26.3	70.40	Transit
10.6m	35044	35920	-0.75	-0.02	5.19	2618	-2.27	-0.02	70.3	107	3.19	4.62	26.3	70.00	Temporary
10.7m	35312	36194	-0.77	-0.02	5.23	2764	-2.15	-0.02	70.6	108.4	3.21	4.66	27.8	70.30	Temporary
10.8m	35593	36483	-0.78	-0.02	5.27	2853	-2.08	-0.02	70.6	108.9	3.23	4.69	28.7	70.30	Temporary
10.9m	35881	36778	-0.79	-0.02	5.32	2913	-2.04	-0.02	70.4	109	3.26	4.73	29.3	70.10	Temporary
11.0m	36179	37083	-0.80	-0.02	5.36	3337	-1.78	-0.02	70.5	109.2	3.29	4.77	33.6	44.90	Transit
11.1m	36515	37427	-0.81	-0.02	5.41	3375	-1.76	-0.02	70.1	108.8	3.32	4.82	33.9	69.80	Temporary
11.2m	36854	37775	-0.81	-0.02	5.47	3406	-1.75	-0.02	69.7	108.3	3.35	4.86	34.2	69.40	Temporary
11.3m	37196	38125	-0.82	-0.02	5.52	3432	-1.73	-0.02	69.3	107.8	3.38	4.91	34.5	69.00	Temporary
11.4m	37540	38478	-0.83	-0.02	5.57	3454	-1.72	-0.02	68.9	107.2	3.41	4.95	34.7	68.60	Temporary
11.5m	37886	38833	-0.84	-0.02	5.63	3473	-1.71	-0.02	68.5	106.6	3.44	5.00	34.9	68.20	Temporary
11.6m	38234	39190	-0.85	-0.02	5.68	3488	-1.70	-0.02	68	105.9	3.48	5.04	35.1	67.70	Temporary
11.7m	38584	39548	-0.85	-0.02	5.73	3501	-1.70	-0.02	67.6	105.2	3.51	5.09	35.2	67.30	Temporary
11.8m	38934	39908	-0.86	-0.02	5.79	3511	-1.69	-0.02	67.1	104.5	3.54	5.13	35.3	66.80	Temporary
11.9m	39286	40268	-0.87	-0.02	5.84	3519	-1.69	-0.02	66.7	103.8	3.57	5.18	35.4	66.40	Temporary
12.0m	39638	40629	-0.88	-0.02	5.90	3524	-1.69	-0.02	66.2	103	3.60	5.23	35.4	65.90	Temporary
12.1m	39991	40991	-0.88	-0.02	5.95	3528	-1.69	-0.02	65.8	102.3	3.63	5.27	35.5	65.50	Temporary
12.2m	40326	41335	-0.89	-0.02	6.00	1863	0.00	-0.03	28.8	34.5	3.67	5.32	18.7	28.50	Temporary
12.3m	40513	41526	-0.89	-0.02	6.03	1864	0.00	-0.03	28.8	34.4	3.68	5.34	18.7	28.50	Temporary
12.4m	40699	41717	-0.88	-0.02	6.06	1866	-0.02	-0.03	28.8	34.4	3.70	5.37	18.8	28.50	Temporary
12.5m	40886	41908	-0.88	-0.02	6.09	1863	-0.02	-0.03	28.8	34.3	3.72	5.39	18.7	28.50	Temporary
12.6m	41072	42099	-0.87	-0.02	6.12	1858	-0.02	-0.03	28.7	34.1	3.73	5.42	18.7	28.40	Temporary
12.7m	41257	42289	-0.87	-0.02	6.15	1850	-0.02	-0.03	28.7	34	3.75	5.44	18.6	28.40	Temporary
12.8m	41442	42478	-0.87	-0.02	6.18	1839	-0.02	-0.03	28.6	33.8	3.77	5.47	18.5	28.30	Temporary
12.9m	41625	42666	-0.86	-0.02	6.21	1825	-0.02	-0.03	28.6	33.5	3.78	5.49	18.4	28.30	Temporary
13.0m	41807	42852	-0.86	-0.02	6.24	1809	-0.02	-0.03	28.5	33.3	3.80	5.51	18.2	28.20	Temporary
13.1m	41987	43036	-0.86	-0.02	6.27	1788	-0.02	-0.03	28.4	33	3.82	5.54	18.0	28.10	Temporary
13.2m	42164	43218	-0.85	-0.02	6.30	1764	-0.02	-0.03	28.3	32.6	3.83	5.56	17.7	28.00	Temporary
13.3m	42339	43398	-0.85	-0.02	6.32	1734	-0.02	-0.03	28.2	32.2	3.85	5.58	17.4	27.90	Temporary
13.4m	42511	43574	-0.85	-0.02	6.35	1698	-0.02	-0.03	28	31.7	3.86	5.61	17.1	27.70	Temporary
13.5m	42678	43745	-0.84	-0.02	6.38	1652	-0.02	-0.03	27.9	31.1	3.88	5.63	16.6	27.60	Temporary
13.6m	42841	43912	-0.84	-0.02	6.41	1591	-0.02	-0.04	27.6	30.4	3.89	5.65	16.0	27.30	Temporary
13.7m	42996	44071	-0.84	-0.02	6.43	1493	-0.02	-0.04	27.2	29.2	3.91	5.67	15.0	26.90	Temporary
13.8m	43136	44215	-0.83	-0.02	6.46	1376	-0.03	-0.04	26.7	27.8	3.92	5.69	13.8	26.40	Temporary
13.9m	43274	44356	-0.83	-0.02	6.48	1378	-0.03	-0.04	26.8	27.8	3.93	5.71	13.9	26.50	Temporary
14.0m	43412	44497	-0.83	-0.02	6.50	1381	-0.03	-0.04	26.8	27.8	3.95	5.73	13.9	26.50	Temporary

Detailed Hydrostatics 10.0m to 25.0m

DRAFT	VOLUME	Δ	LCB	TCB	VCB	WPA	LCF	TCF	KMT	KML	MCT _g (GML)	MCH _g (GMT)	TPC	Allow VCG	Stability Condition
(m)	(m ³)	(tonnes)	(m)	(m)	(m)	(m ³)	(m)	(m)	(m)	(m)	(tm-cm)	(tm-cm)	(t)	(m)	
14.1m	43550	44639	-0.83	-0.02	6.53	1383	-0.03	-0.04	26.8	27.8	3.96	5.74	13.9	26.50	Temporary
14.2m	43689	44781	-0.82	-0.02	6.55	1386	-0.03	-0.04	26.9	27.9	3.97	5.76	13.9	26.60	Temporary
14.3m	43827	44923	-0.82	-0.02	6.58	1389	-0.03	-0.04	26.9	27.9	3.98	5.78	14.0	26.60	Temporary
14.4m	43966	45065	-0.82	-0.02	6.60	1391	-0.03	-0.04	26.9	27.9	4.00	5.80	14.0	26.60	Temporary
14.5m	44106	45208	-0.82	-0.02	6.63	1394	-0.03	-0.04	27	27.9	4.01	5.82	14.0	26.70	Temporary
14.6m	44245	45351	-0.81	-0.02	6.65	1397	-0.03	-0.04	27	27.9	4.02	5.84	14.0	26.70	Temporary
14.7m	44385	45495	-0.81	-0.02	6.68	1399	-0.03	-0.04	27.1	27.9	4.03	5.85	14.1	26.80	Temporary
14.8m	44525	45638	-0.81	-0.02	6.70	1402	-0.03	-0.04	27.1	28	4.05	5.87	14.1	26.80	Temporary
14.9m	44665	45782	-0.81	-0.02	6.73	1404	-0.03	-0.04	27.2	28	4.06	5.89	14.1	26.90	Temporary
15.0m	44806	45926	-0.80	-0.02	6.75	1407	-0.03	-0.04	27.2	28	4.07	5.91	14.1	26.90	Temporary
15.1m	44947	46070	-0.80	-0.02	6.78	1410	-0.03	-0.04	27.2	28	4.09	5.93	14.2	26.90	Temporary
15.2m	45088	46215	-0.80	-0.02	6.81	1412	-0.03	-0.04	27.3	28	4.10	5.95	14.2	27.00	Temporary
15.3m	45229	46360	-0.80	-0.02	6.83	1415	-0.03	-0.04	27.3	28	4.11	5.96	14.2	27.00	Temporary
15.4m	45371	46505	-0.79	-0.02	6.86	1417	-0.03	-0.04	27.4	28.1	4.12	5.98	14.3	27.10	Temporary
15.5m	45513	46650	-0.79	-0.02	6.89	1420	-0.03	-0.04	27.4	28.1	4.14	6.00	14.3	27.10	Temporary
15.6m	45655	46796	-0.79	-0.02	6.91	1423	-0.03	-0.04	27.4	28.1	4.15	6.02	14.3	27.10	Temporary
15.7m	45797	46942	-0.79	-0.02	6.94	1426	-0.03	-0.04	27.5	28.1	4.16	6.04	14.3	27.20	Temporary
15.8m	45940	47088	-0.78	-0.02	6.97	1430	-0.03	-0.04	27.5	28.1	4.18	6.06	14.4	27.20	Temporary
15.9m	46083	47235	-0.78	-0.02	6.99	1434	-0.03	-0.04	27.6	28.2	4.19	6.08	14.4	27.30	Temporary
16.0m	46227	47382	-0.78	-0.02	7.02	1438	-0.03	-0.04	27.7	28.2	4.20	6.10	14.5	27.40	Temporary
16.1m	46371	47530	-0.77	-0.02	7.05	1443	-0.03	-0.04	27.7	28.2	4.21	6.12	14.5	27.40	Temporary
16.2m	46515	47678	-0.77	-0.02	7.08	1447	-0.04	-0.04	27.8	28.3	4.23	6.13	14.6	27.50	Temporary
16.3m	46660	47827	-0.77	-0.02	7.11	1451	-0.04	-0.04	27.8	28.3	4.24	6.15	14.6	27.50	Temporary
16.4m	46805	47975	-0.77	-0.02	7.14	1454	-0.04	-0.04	27.8	28.3	4.25	6.17	14.6	27.50	Temporary
16.5m	46951	48125	-0.77	-0.02	7.16	1458	-0.04	-0.04	27.8	28.3	4.27	6.19	14.6	27.50	Temporary
16.6m	47097	48274	-0.77	-0.02	7.19	1461	-0.04	-0.04	27.8	28.3	4.28	6.21	14.7	27.50	Temporary
16.7m	47242	48424	-0.76	-0.02	7.22	1463	-0.04	-0.04	27.8	28.3	4.29	6.23	14.7	27.50	Temporary
16.8m	47389	48573	-0.76	-0.02	7.25	1466	-0.04	-0.04	27.8	28.3	4.31	6.25	14.7	27.50	Temporary
16.9m	47535	48724	-0.76	-0.02	7.28	1468	-0.04	-0.04	27.8	28.2	4.32	6.27	14.7	27.50	Temporary
17.0m	47682	48874	-0.76	-0.02	7.31	1471	-0.04	-0.04	27.8	28.2	4.33	6.29	14.8	27.50	Temporary
17.1m	47829	49025	-0.75	-0.02	7.34	1473	-0.04	-0.04	27.7	28.2	4.35	6.31	14.8	27.40	Temporary
17.2m	47976	49175	-0.75	-0.02	7.37	1475	-0.04	-0.04	27.7	28.2	4.36	6.33	14.8	27.40	Temporary
17.3m	48123	49327	-0.75	-0.02	7.40	1477	-0.04	-0.04	27.7	28.2	4.37	6.35	14.8	27.40	Temporary
17.4m	48271	49478	-0.75	-0.02	7.43	1479	-0.04	-0.04	27.7	28.2	4.39	6.37	14.9	27.40	Temporary
17.5m	48419	49629	-0.75	-0.02	7.46	1481	-0.04	-0.04	27.7	28.2	4.40	6.39	14.9	27.40	Temporary
17.6m	48567	49781	-0.74	-0.02	7.49	1483	-0.04	-0.04	27.7	28.2	4.41	6.41	14.9	27.40	Temporary
17.7m	48715	49933	-0.74	-0.02	7.52	1484	-0.04	-0.04	27.7	28.1	4.43	6.42	14.9	27.40	Temporary
17.8m	48864	50085	-0.74	-0.02	7.56	1485	-0.04	-0.04	27.6	28.1	4.44	6.44	14.9	27.30	Temporary
17.9m	49012	50237	-0.74	-0.02	7.59	1485	-0.04	-0.04	27.6	28.1	4.45	6.46	14.9	27.30	Temporary
18.0m	49161	50390	-0.74	-0.02	7.62	1485	-0.04	-0.04	27.6	28.1	4.47	6.48	14.9	25.23	Inspection
18.1m	49309	50542	-0.73	-0.02	7.65	1485	-0.04	-0.04	27.6	28	4.48	6.50	14.9	27.30	Temporary

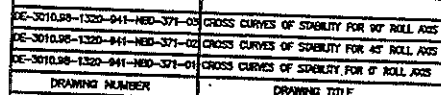
Detailed Hydrostatics 10.0m to 25.0m

DRAFT (m)	VOLUME (m³)	Δ (SW) (tonnes)	LCB (m)	TCB (m)	VCB (m)	WPA (m²)	LCF (m)	TCF (m)	KMT (m)	KML (m)	MCT* S(GML) (tm-cm)	MCH* S(GMT) (tm-cm)	TPC (t)	Allow VCG (m)	Stability Condition
18.2m	49458	50694	-0.73	-0.02	7.68	1485	-0.04	-0.04	27.5	28	4.50	6.52	14.9	27.20	Temporary
18.3m	49606	50846	-0.73	-0.02	7.71	1485	-0.04	-0.04	27.5	28	4.51	6.54	14.9	27.20	Temporary
18.4m	49755	50998	-0.73	-0.02	7.74	1485	-0.04	-0.04	27.5	27.9	4.52	6.56	14.9	27.20	Temporary
18.5m	49903	51151	-0.72	-0.02	7.78	1485	-0.04	-0.04	27.4	27.9	4.54	6.58	14.9	27.10	Temporary
18.6m	50052	51303	-0.72	-0.02	7.81	1485	-0.04	-0.04	27.4	27.9	4.55	6.60	14.9	27.10	Temporary
18.7m	50200	51455	-0.72	-0.02	7.84	1485	-0.04	-0.04	27.4	27.8	4.56	6.62	14.9	27.10	Temporary
18.8m	50349	51607	-0.72	-0.02	7.87	1485	-0.04	-0.04	27.3	27.8	4.58	6.64	14.9	27.00	Temporary
18.9m	50497	51760	-0.72	-0.02	7.90	1485	-0.04	-0.04	27.3	27.8	4.59	6.66	14.9	27.00	Temporary
19.0m	50646	51912	-0.71	-0.02	7.94	1485	-0.04	-0.04	27.3	27.8	4.60	6.68	14.9	27.00	Temporary
19.1m	50794	52064	-0.71	-0.02	7.97	1485	-0.04	-0.04	27.3	27.7	4.62	6.70	14.9	27.00	Temporary
19.2m	50943	52216	-0.71	-0.02	8.00	1485	-0.04	-0.04	27.2	27.7	4.63	6.72	14.9	26.90	Temporary
19.3m	51091	52368	-0.71	-0.02	8.03	1485	-0.04	-0.04	27.2	27.7	4.64	6.74	14.9	26.90	Temporary
19.4m	51240	52521	-0.71	-0.02	8.07	1485	-0.04	-0.04	27.2	27.6	4.66	6.76	14.9	26.90	Temporary
19.5m	51388	52673	-0.71	-0.02	8.10	1485	-0.04	-0.04	27.2	27.6	4.67	6.78	14.9	26.90	Temporary
19.6m	51537	52825	-0.70	-0.02	8.13	1485	-0.04	-0.04	27.1	27.6	4.68	6.80	14.9	26.80	Temporary
19.7m	51685	52977	-0.70	-0.02	8.17	1485	-0.04	-0.04	27.1	27.6	4.70	6.82	14.9	26.80	Temporary
19.8m	51834	53129	-0.70	-0.02	8.20	1485	-0.04	-0.04	27.1	27.5	4.71	6.84	14.9	26.80	Temporary
19.9m	51983	53283	-0.70	-0.02	8.23	1496	-0.04	-0.04	27.2	27.6	4.72	6.86	15.0	26.90	Temporary
20.0m	52133	53436	-0.70	-0.02	8.27	1496	-0.04	-0.04	27.1	27.6	4.74	6.88	15.0	26.80	Temporary
20.1m	52282	53589	-0.69	-0.02	8.30	1496	-0.04	-0.04	27.1	27.6	4.75	6.90	15.0	26.80	Temporary
20.2m	52432	53743	-0.69	-0.02	8.33	1496	-0.04	-0.04	27.1	27.5	4.77	6.91	15.0	26.80	Temporary
20.3m	52582	53896	-0.69	-0.02	8.37	1496	-0.04	-0.04	27.1	27.5	4.78	6.93	15.0	26.80	Temporary
20.4m	52731	54050	-0.69	-0.02	8.40	1496	-0.04	-0.04	27.1	27.5	4.79	6.95	15.0	26.80	Temporary
20.5m	52881	54203	-0.69	-0.02	8.44	1496	-0.04	-0.04	27	27.5	4.81	6.97	15.0	26.70	Temporary
20.6m	53030	54356	-0.68	-0.02	8.47	1496	-0.04	-0.04	27	27.5	4.82	6.99	15.0	26.70	Temporary
20.7m	53180	54510	-0.68	-0.02	8.50	1496	-0.04	-0.04	27	27.4	4.83	7.01	15.0	26.70	Temporary
20.8m	53330	54663	-0.68	-0.02	8.54	1496	-0.04	-0.04	27	27.4	4.85	7.03	15.0	26.70	Temporary
20.9m	53479	54816	-0.68	-0.02	8.57	1496	-0.04	-0.04	27	27.4	4.86	7.05	15.0	26.70	Temporary
21.0m	53629	54970	-0.68	-0.02	8.61	1496	-0.04	-0.04	26.9	27.4	4.87	7.07	15.0	26.60	Temporary
21.1m	53779	55123	-0.68	-0.02	8.64	1496	-0.04	-0.04	26.9	27.3	4.89	7.09	15.0	26.60	Temporary
21.2m	53928	55276	-0.67	-0.02	8.68	1496	-0.04	-0.04	26.9	27.3	4.90	7.11	15.0	26.60	Temporary
21.3m	54078	55430	-0.67	-0.02	8.71	1496	-0.04	-0.04	26.9	27.3	4.92	7.13	15.0	26.60	Temporary
21.4m	54227	55583	-0.67	-0.02	8.75	1496	-0.04	-0.04	26.9	27.3	4.93	7.15	15.0	26.60	Temporary
21.5m	54377	55736	-0.67	-0.02	8.78	1496	-0.04	-0.04	26.8	27.3	4.94	7.17	15.0	26.50	Temporary
21.6m	54527	55890	-0.67	-0.02	8.82	1496	-0.04	-0.04	26.8	27.3	4.96	7.19	15.0	26.50	Temporary
21.7m	54676	56043	-0.67	-0.02	8.85	1496	-0.04	-0.04	26.8	27.2	4.97	7.21	15.0	26.50	Temporary
21.8m	54826	56197	-0.66	-0.02	8.89	1496	-0.04	-0.04	26.8	27.2	4.98	7.23	15.0	26.50	Temporary
21.9m	54976	56350	-0.66	-0.02	8.92	1496	-0.04	-0.04	26.8	27.2	5.00	7.25	15.0	26.50	Temporary
22.0m	55125	56503	-0.66	-0.02	8.96	1496	-0.04	-0.04	26.8	27.2	5.01	7.27	15.0	23.04	Operation / Survival
22.1m	55275	56657	-0.66	0.02	8.99	1496	-0.04	0.04	26.8	27.2	5.02	7.29	15.0	26.5	Temporary
22.2m	55424	56810	-0.66	0.02	9.03	1496	-0.04	0.04	26.7	27.2	5.04	7.31	15.0	26.4	Temporary

Detailed Hydrostatics 10.0m to 25.0

DRAFT (m)	VOLUME (m³)	Δ (SW) (tonnes)	LCB (m)	TCB (m)	VCB (m)	WPA (m³)	LCF (m)	TCF (m)	KMT (m)	KML (m)	MCT* (GML) (tm-cm)	MCH* (GMT) (tm-cm)	TPC (t)	Allow VCG (m)	Stability Condition
22.3m	55574	56963	-0.66	0.02	9.06	1496	-0.04	0.04	26.7	27.1	5.05	7.33	15.0	26.4	Temporary
22.4m	55724	57117	-0.65	0.02	9.10	1496	-0.04	0.04	26.7	27.1	5.06	7.35	15.0	26.4	Temporary
22.5m	55873	57270	-0.65	0.03	9.14	1496	-0.04	0.04	26.7	27.1	5.08	7.37	15.0	26.4	Temporary
22.6m	56023	57423	-0.65	0.03	9.17	1496	-0.04	0.04	26.7	27.1	5.09	7.39	15.0	26.4	Temporary
22.7m	56172	57577	-0.65	0.03	9.21	1496	-0.04	0.04	26.7	27.1	5.11	7.41	15.0	26.4	Temporary
22.8m	56322	57730	-0.65	0.03	9.24	1496	-0.04	0.04	26.7	27.1	5.12	7.43	15.0	26.4	Temporary
22.9m	56472	57883	-0.65	0.03	9.28	1496	-0.04	0.04	26.6	27.1	5.13	7.45	15.0	26.3	Temporary
23.0m	56621	58037	-0.64	0.03	9.32	1496	-0.04	0.04	26.6	27.0	5.15	7.47	15.0	26.3	Temporary
23.1m	56771	58190	-0.64	0.03	9.35	1496	-0.04	0.04	26.6	27.0	5.16	7.49	15.0	26.3	Temporary
23.2m	56921	58344	-0.64	0.03	9.39	1496	-0.04	0.04	26.6	27.0	5.17	7.51	15.0	26.3	Temporary
23.3m	57070	58497	-0.64	0.03	9.42	1496	-0.04	0.04	26.6	27.0	5.19	7.53	15.0	26.3	Temporary
23.4m	57220	58650	-0.64	0.03	9.46	1496	-0.04	0.04	26.6	27.0	5.20	7.55	15.0	26.3	Temporary
23.5m	57369	58804	-0.64	0.03	9.50	1496	-0.04	0.04	26.6	27.0	5.21	7.57	15.0	26.3	Temporary
23.6m	57519	58957	-0.63	0.03	9.53	1496	-0.04	0.04	26.6	27.0	5.23	7.59	15.0	26.3	Temporary
23.7m	57669	59110	-0.63	0.03	9.57	1496	-0.04	0.04	26.6	27.0	5.24	7.61	15.0	26.3	Temporary
23.8m	57818	59264	-0.63	0.03	9.61	1496	-0.04	0.04	26.5	26.9	5.25	7.63	15.0	26.2	Temporary
23.9m	57968	59417	-0.63	0.03	9.64	1496	-0.04	0.04	26.5	26.9	5.27	7.65	15.0	26.2	Temporary
24.0m	58117	59570	-0.63	0.03	9.68	1496	-0.04	0.04	26.5	26.9	5.28	7.66	15.0	26.2	Temporary
24.1m	58267	59724	-0.63	0.03	9.72	1496	-0.04	0.04	26.5	26.9	5.30	7.68	15.0	26.2	Temporary
24.2m	58417	59877	-0.63	0.03	9.75	1496	-0.04	0.04	26.5	26.9	5.31	7.70	15.0	26.2	Temporary
24.3m	58566	60030	-0.62	0.03	9.79	1496	-0.04	0.04	26.5	26.9	5.32	7.72	15.0	26.2	Temporary
24.4m	58716	60184	-0.62	0.03	9.83	1496	-0.04	0.04	26.5	26.9	5.34	7.74	15.0	26.2	Temporary
24.5m	58866	60337	-0.62	0.03	9.87	1496	-0.04	0.04	26.5	26.9	5.35	7.76	15.0	26.2	Temporary
24.6m	59015	60491	-0.62	0.03	9.90	1495	-0.04	0.04	26.5	26.9	5.36	7.78	15.0	26.2	Temporary
24.7m	59164	60644	-0.62	0.03	9.94	1491	-0.04	0.04	26.4	26.8	5.38	7.80	15.0	26.1	Temporary
24.8m	59313	60796	-0.62	0.03	9.98	1488	-0.04	0.04	26.3	26.7	5.39	7.82	15.0	26	Temporary
24.9m	59462	60949	-0.61	0.03	10.01	1484	-0.04	0.04	26.2	26.6	5.40	7.84	14.9	25.9	Temporary
25.0m	59610	61100	-0.61	0.03	10.05	1480	-0.04	0.04	26.1	26.6	5.42	7.86	14.9	25.8	Temporary

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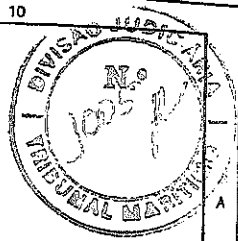
BR BRASCO P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No :- 7/15/2150

NOBLE DENTON Petromec AMEC

HYDROSTATIC CURVES
FOR UNIT PETROBRAS 36

DRIVEN/DATE	SCE/OCT.97
CHECKED/DATE	MSE/24.3.99
APPROVED/DATE	AT/24.3.99
SCALE	AS NOTED (A1)

DRAWING NUMBER
DE-3010.38-1320-941-NBD-370-01



7.10 CAPACITIES AND CENTRES OF GRAVITY

Tables for the following tanks are included:

LCG is from FP, TCG +ve to Stbd, VCG is from USK

Seawater Ballast Tanks	1 PORT	1 STBD
Seawater Ballast Tanks	2 PORT	2 STBD
Seawater Ballast Tanks	3 PORT	3 STBD
Seawater Ballast Tanks	4 PORT	4 STBD
Seawater Ballast Tanks	5 PORT	5 STBD
Seawater Ballast Tanks	6 PORT	6 STBD
Seawater Ballast Tanks	7 PORT	7 STBD
Seawater Ballast Tanks	11 PORT	11 STBD
Seawater Ballast Tanks	13 PORT	13 STBD
Seawater Ballast Tanks	16 PORT	16 STBD
Seawater Ballast Tanks	17 PORT	17 STBD
Seawater Ballast Tanks	18 PORT	18 STBD
Seawater Ballast Tanks	19 PORT	19 STBD
Seawater Ballast Tanks	20 PORT	20 STBD
Seawater Ballast Tanks	21 PORT	21 STBD
Seawater Ballast Tanks	22 PORT	22 STBD
Seawater Ballast Tanks	23 PORT	23 STBD
Seawater Ballast Tanks	24 PORT	24 STBD
Seawater Ballast Tanks	25 PORT	25 STBD
Seawater Ballast Tanks	26 PORT	26 STBD
Chain Locker Ballast Tanks	1 PORT	2 PORT
Chain Locker Ballast Tanks	3 STBD	4 STBD
Chain Locker Ballast Tanks	5 PORT	6 PORT
Chain Locker Ballast Tanks	7 STBD	8 STBD
Drill Water Tanks	8 PORT	8 STBD
Drill Water Tanks	9 PORT	9 STBD
Drill Water Tanks	14 PORT	14 STBD
Drill Water Tanks	15 PORT	15 STBD
Potable Water Tanks	1 PORT	1 STBD
Potable Water Day Tank		
Fuel Oil Tank	10 PORT	10 STBD
Fuel Oil Tank	12 PORT	12 STBD
Fuel Oil Overflow Tank	PORT	STBD
Diesel Oil Sludge Tank	N1 PORT	N1 STBD
Diesel Oil Settling Tank	N1 PORT	N4 STBD
Diesel Oil Day Tank	N2 PORT	N3 STBD
Diesel Oil Service Tank		
Drains Storage Tanks	N1 PORT	N1 STBD
Waste Oil Tanks	N1 PORT	N1 STBD
Bilge Holding Tanks	PORT	STBD

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ENCLOSURE

DATE

Tank Capacity Tables

SW BALLAST TANK No. 1 PORT

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	0.0
30.5	11.56	-24.47	0.27	3.4	271.9	2001.0
68.9	11.27	-24.47	0.54	7.8	325.1	2340.5
110.3	11.11	-24.35	0.81	12.4	344.7	2497.7
139.0	10.41	-24.41	1.00	15.7	174.7	517.9
167.5	9.90	-24.45	1.21	18.9	176.1	528.8
196.4	9.53	-24.48	1.44	22.1	176.6	532.8
225.4	9.25	-24.50	1.67	25.4	176.7	533.7
254.3	9.04	-24.52	1.91	28.7	176.7	533.7
283.3	8.87	-24.53	2.15	32.0	177.1	536.8
312.3	8.73	-24.54	2.39	35.2	177.3	538.2
341.4	8.91	-24.55	2.63	38.5	177.3	538.1
370.4	8.51	-24.55	2.88	41.8	177.3	538.2
399.4	8.43	-24.56	3.12	45.0	177.3	538.1
428.4	8.35	-24.57	3.37	48.3	177.3	538.1
457.4	8.29	-24.57	3.62	51.6	177.3	538.2
486.5	8.23	-24.57	3.86	54.9	177.3	538.2
515.5	8.18	-24.58	4.11	58.1	177.3	538.2
544.5	8.14	-24.58	4.36	61.4	177.3	538.1
591.8	8.37	-24.56	4.75	66.7	425.6	3432.2
646.6	8.66	-24.54	5.17	72.9	425.6	3432.2
701.4	8.90	-24.52	5.57	79.1	425.6	3432.2
756.1	9.11	-24.50	5.95	85.3	425.6	3432.2
810.9	9.29	-24.49	6.30	91.5	425.6	3432.3
865.7	9.45	-24.47	6.65	97.6	425.6	3432.3
886.7	9.50	-24.47	6.78	100.0	425.6	3432.3

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Tank Capacity Tables

SW BALLAST TANK No. 1 STBD

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	
30.5	11.56	24.47	0.27	3.4	271.9	2001.0
68.9	11.27	24.47	0.54	7.8	325.1	2340.5
110.3	11.11	24.35	0.81	12.4	344.7	2497.7
139.0	10.41	24.41	1.00	15.7	174.7	517.9
167.5	9.90	24.45	1.21	18.9	176.1	528.8
196.4	9.53	24.48	1.44	22.1	176.6	532.8
225.4	9.25	24.50	1.67	25.4	176.7	533.7
254.3	9.04	24.52	1.91	28.7	176.7	533.7
283.3	8.87	24.53	2.15	32.0	177.1	536.8
312.3	8.73	24.54	2.39	35.2	177.3	538.2
341.4	8.91	24.55	2.63	38.5	177.3	538.1
370.4	8.51	24.55	2.88	41.8	177.3	538.2
399.4	8.43	24.56	3.12	45.0	177.3	538.1
428.4	8.35	24.57	3.37	48.3	177.3	538.1
457.4	8.29	24.57	3.62	51.6	177.3	538.2
486.5	8.23	24.57	3.86	54.9	177.3	538.2
515.5	8.18	24.58	4.11	58.1	177.3	538.2
544.5	8.14	24.58	4.36	61.4	177.3	538.1
591.8	8.37	24.56	4.75	66.7	425.6	3432.2
646.6	8.66	24.54	5.17	72.9	425.6	3432.2
701.4	8.90	24.52	5.57	79.1	425.6	3432.2
756.1	9.11	24.50	5.95	85.3	425.6	3432.2
810.9	9.29	24.49	6.30	91.5	425.6	3432.3
865.7	9.45	24.47	6.65	97.6	425.6	3432.3
886.7	9.50	24.47	6.78	100.0	425.6	3432.3

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Tank Capacity Tables

SW BALLAST TANK No. 2 PORT

Volume		TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	0.0
27.2	8.09	-30.67	0.26	3.1	227.4	395.8
58.1	7.80	-30.68	0.52	6.6	250.1	523.0
91.2	7.60	-30.69	0.79	10.4	264.8	610.6
125.6	7.44	-30.70	1.05	14.3	270.3	650.9
161.3	7.31	-30.70	1.32	18.4	284.9	750.0
198.0	7.20	-30.70	1.58	22.6	287.8	785.7
235.0	7.11	-30.70	1.85	26.8	288.7	802.5
272.2	7.04	-30.70	2.11	31.0	288.8	809.1
309.5	6.99	-30.70	2.36	35.3	289.1	810.8
346.7	6.95	-30.70	2.62	39.5	289.2	811.3
384.0	6.92	-30.70	2.88	43.8	289.2	811.3
421.3	6.89	-30.70	3.13	48.0	289.2	811.3
458.6	6.87	-30.70	3.38	52.3	289.2	811.3
495.9	6.85	-30.70	3.64	56.5	289.2	811.2
533.1	6.83	-30.70	3.89	60.8	289.2	811.3
570.4	6.82	-30.70	4.14	65.0	289.2	811.3
607.7	6.80	-30.70	4.39	69.2	289.2	811.3
645.0	6.79	-30.70	4.65	73.5	289.2	811.3
682.2	6.78	-30.70	4.90	77.7	289.2	811.3
719.5	6.77	-30.70	5.15	82.0	289.2	811.3
755.9	6.77	-30.70	5.39	86.1	280.1	718.7
791.9	6.77	-30.71	5.64	90.2	280.1	718.7
827.8	6.78	-30.71	5.88	94.3	280.1	718.7
863.8	6.78	-30.71	6.13	98.4	280.1	718.7
877.6	6.78	-30.71	6.22	100.0	280.1	718.7

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Tank Capacity Tables

SW BALLAST TANK No. 2 STBD

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	
27.2	8.09	30.67	0.26	3.1	227.4	395.8
58.1	7.80	30.68	0.52	6.6	250.1	523.0
91.2	7.60	30.69	0.79	10.4	264.8	610.6
125.6	7.44	30.70	1.05	14.3	270.3	650.9
161.3	7.31	30.70	1.32	18.4	284.9	750.0
198.0	7.20	30.70	1.58	22.6	287.8	785.7
235.0	7.11	30.70	1.85	26.8	288.7	802.5
272.2	7.04	30.70	2.11	31.0	288.8	809.1
309.5	6.99	30.70	2.36	35.3	289.1	810.8
346.7	6.95	30.70	2.62	39.5	289.2	811.3
384.0	6.92	30.70	2.88	43.8	289.2	811.3
421.3	6.89	30.70	3.13	48.0	289.2	811.3
458.6	6.87	30.70	3.38	52.3	289.2	811.3
495.9	6.85	30.70	3.64	56.5	289.2	811.2
533.1	6.83	30.70	3.89	60.8	289.2	811.3
570.4	6.82	30.70	4.14	65.0	289.2	811.3
607.7	6.80	30.70	4.39	69.2	289.2	811.3
645.0	6.79	30.70	4.65	73.5	289.2	811.3
682.2	6.78	30.70	4.90	77.7	289.2	811.3
719.5	6.77	30.70	5.15	82.0	289.2	811.3
755.9	6.77	30.70	5.39	86.1	280.1	718.7
791.9	6.77	30.71	5.64	90.2	280.1	718.7
827.8	6.78	30.71	5.88	94.3	280.1	718.7
863.8	6.78	30.71	6.13	98.4	280.1	718.7
877.6	6.78	30.71	6.22	100.0	280.1	718.7

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Tank Capacity Tables

SW BALLAST TANK No. 3 PORT

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	0.0
30.7	16.76	-30.86	0.25	4.2	245.8	437.0
61.5	16.76	-30.86	0.50	8.4	245.8	437.0
92.2	16.76	-30.86	0.75	12.6	245.8	437.0
122.9	16.76	-30.86	1.00	16.9	245.8	437.0
153.6	16.76	-30.86	1.25	21.1	245.8	437.0
184.4	16.76	-30.86	1.50	25.3	183.8	217.3
208.3	16.70	-30.88	1.70	28.6	183.8	217.3
232.1	16.65	-30.90	1.91	31.9	183.8	217.3
256.0	16.61	-30.91	2.13	35.1	245.8	437.0
286.8	16.63	-30.90	2.41	39.3	245.8	437.0
317.5	16.64	-30.90	2.69	43.6	245.8	437.0
348.2	16.65	-30.90	2.96	47.8	245.8	437.0
378.9	16.66	-30.89	3.22	52.0	245.8	437.0
409.7	16.67	-30.89	3.49	56.2	245.8	437.0
440.4	16.68	-30.89	3.75	60.4	245.8	437.0
471.1	16.68	-30.89	4.01	64.6	245.8	437.0
501.9	16.69	-30.88	4.27	68.9	245.8	437.0
532.6	16.69	-30.88	4.53	73.1	245.8	437.0
563.3	16.70	-30.88	4.79	77.3	245.8	437.0
594.0	16.70	-30.88	5.04	81.5	245.8	437.0
624.8	16.70	-30.88	5.30	85.7	245.8	437.0
655.5	16.71	-30.88	5.56	89.9	245.8	437.0
686.2	16.71	-30.88	5.81	94.2	245.8	437.0
716.9	16.71	-30.88	6.06	98.4	245.8	437.0
728.7	16.71	-30.88	6.16	100.0	245.8	437.0

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Tank Capacity Tables

SW BALLAST TANK No. 3 STBD

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	
30.7	16.76	30.86	0.25	4.2	245.8	437.0
61.5	16.76	30.86	0.50	8.4	245.8	437.0
92.2	16.76	30.86	0.75	12.6	245.8	437.0
122.9	16.76	30.86	1.00	16.9	245.8	437.0
153.6	16.76	30.86	1.25	21.1	245.8	437.0
184.4	16.76	30.86	1.50	25.3	183.8	217.3
208.3	16.70	30.88	1.70	28.6	183.8	217.3
232.1	16.65	30.90	1.91	31.9	183.8	217.3
256.0	16.61	30.91	2.13	35.1	245.8	437.0
286.8	16.63	30.90	2.41	39.3	245.8	437.0
317.5	16.64	30.90	2.69	43.6	245.8	437.0
348.2	16.65	30.90	2.96	47.8	245.8	437.0
378.9	16.66	30.89	3.22	52.0	245.8	437.0
409.7	16.67	30.89	3.49	56.2	245.8	437.0
440.4	16.68	30.89	3.75	60.4	245.8	437.0
471.1	16.68	30.89	4.01	64.6	245.8	437.0
501.9	16.69	30.88	4.27	68.9	245.8	437.0
532.6	16.69	30.88	4.53	73.1	245.8	437.0
563.3	16.70	30.88	4.79	77.3	245.8	437.0
594.0	16.70	30.88	5.04	81.5	245.8	437.0
624.8	16.70	30.88	5.30	85.7	245.8	437.0
655.5	16.71	30.88	5.56	89.9	245.8	437.0
686.2	16.71	30.88	5.81	94.2	245.8	437.0
716.9	16.71	30.88	6.06	98.4	245.8	437.0
728.7	16.71	30.88	6.16	100.0	245.8	437.0

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Tank Capacity Tables

SW BALLAST TANK No. 4 PORT

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	0.0
24.3	14.78	-36.10	0.26	3.0	82.9	991.5
54.2	14.44	-36.20	0.54	6.8	104.7	1250.6
86.4	14.24	-36.26	0.80	10.8	112.0	1372.0
119.6	14.11	-36.28	1.07	15.0	112.6	1422.6
153.0	14.02	-36.31	1.32	19.2	112.6	1436.9
186.5	13.96	-36.22	1.58	23.4	107.8	1324.5
218.8	13.89	-36.34	1.83	27.4	107.8	1324.5
251.2	13.83	-36.35	2.07	31.5	107.8	1324.5
283.5	13.79	-36.80	2.32	35.5	112.5	1437.0
317.0	13.78	-36.36	2.58	39.7	112.5	1437.0
350.4	13.77	-36.36	2.83	43.9	112.5	1437.0
383.9	13.76	-36.36	3.09	48.1	112.5	1437.0
417.3	13.76	-36.36	3.34	52.3	112.5	1437.0
450.8	13.75	-36.36	3.60	56.5	112.5	1437.0
484.3	13.75	-36.36	3.85	60.7	112.5	1437.0
517.7	13.74	-36.36	4.10	64.9	112.5	1437.0
551.2	13.74	-36.37	4.35	69.0	112.5	1437.0
584.6	13.74	-36.37	4.60	73.2	112.5	1437.0
618.1	13.74	-36.37	4.86	77.4	112.5	1436.9
651.6	13.73	-36.37	5.11	81.6	112.5	1436.9
685.0	13.73	-36.37	5.36	85.8	112.5	1437.0
718.5	13.73	-36.37	5.61	90.0	112.5	1436.9
752.0	13.73	-36.37	5.86	94.2	112.5	1436.9
785.4	13.73	-36.37	6.11	98.4	112.5	1436.9
798.3	13.73	-36.37	6.21	100.0	112.5	1436.9

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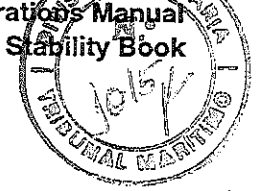
Tank Capacity Tables

SW BALLAST TANK No. 4 STBD

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	
24.3	14.78	36.10	0.26	3.0	82.9	991.5
54.2	14.44	36.20	0.54	6.8	104.7	1250.6
86.4	14.24	36.26	0.80	10.8	112.0	1372.0
119.6	14.11	36.28	1.07	15.0	112.6	1422.6
153.0	14.02	36.31	1.32	19.2	112.6	1436.9
186.5	13.96	36.22	1.58	23.4	107.8	1324.5
218.8	13.89	36.34	1.83	27.4	107.8	1324.5
251.2	13.83	36.35	2.07	31.5	107.8	1324.5
283.5	13.79	36.80	2.32	35.5	112.5	1437.0
317.0	13.78	36.36	2.58	39.7	112.5	1437.0
350.4	13.77	36.36	2.83	43.9	112.5	1437.0
383.9	13.76	36.36	3.09	48.1	112.5	1437.0
417.3	13.76	36.36	3.34	52.3	112.5	1437.0
450.8	13.75	36.36	3.60	56.5	112.5	1437.0
484.3	13.75	36.36	3.85	60.7	112.5	1437.0
517.7	13.74	36.36	4.10	64.9	112.5	1437.0
551.2	13.74	36.37	4.35	69.0	112.5	1437.0
584.6	13.74	36.37	4.60	73.2	112.5	1437.0
618.1	13.74	36.37	4.86	77.4	112.5	1436.9
651.6	13.73	36.37	5.11	81.6	112.5	1436.9
685.0	13.73	36.37	5.36	85.8	112.5	1437.0
718.5	13.73	36.37	5.61	90.0	112.5	1436.9
752.0	13.73	36.37	5.86	94.2	112.5	1436.9
785.4	13.73	36.37	6.11	98.4	112.5	1436.9
798.3	13.73	36.37	6.21	100.0	112.5	1436.9

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Tank Capacity Tables



SW BALLAST TANK No. 5 PORT

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	0.0
40.9	28.19	-24.38	0.26	16.0	306.2	1386.1
85.4	28.19	-24.25	0.51	33.3	352.0	1452.0
131.3	28.19	-24.17	0.77	51.2	368.2	1473.9
140.5	28.15	-24.03	0.83	54.8	2.9	184.3
147.9	28.11	-23.89	0.90	57.7	2.9	184.3
155.3	28.08	-23.77	0.99	60.5	2.9	184.3
163.7	28.03	-23.65	1.11	63.8	3.4	194.7
172.3	27.98	-23.53	1.24	67.1	3.4	194.7
180.8	27.94	-23.43	1.38	70.5	3.4	194.7
189.3	27.90	-23.34	0.53	73.8	3.4	194.7
197.9	27.86	-23.25	1.69	77.1	3.4	194.7
206.4	27.83	-23.18	1.86	80.5	3.4	194.7
214.0	27.81	-23.11	2.02	83.4	2.9	184.3
221.4	27.80	-23.05	2.18	86.3	2.9	184.3
228.8	27.79	-23.00	2.34	89.2	2.9	184.3
237.0	27.76	-22.94	2.53	92.4	3.4	194.7
245.6	27.74	-22.89	2.73	95.7	3.4	194.7
254.1	27.72	-22.84	2.93	99.0	3.4	194.7
256.6	27.71	-22.82	2.99	100.0	3.4	194.7

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Tank Capacity Tables

SW BALLAST TANK No. 5 STBD

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	
40.9	28.19	24.38	0.26	16.0	306.2	1386.1
85.4	28.19	24.25	0.51	33.3	352.0	1452.0
131.3	28.19	24.17	0.77	51.2	368.2	1473.9
140.5	28.15	24.03	0.83	54.8	2.9	184.3
147.9	28.11	23.89	0.90	57.7	2.9	184.3
155.3	28.08	23.77	0.99	60.5	2.9	184.3
163.7	28.03	23.65	1.11	63.8	3.4	194.7
172.3	27.98	23.53	1.24	67.1	3.4	194.7
180.8	27.94	23.43	1.38	70.5	3.4	194.7
189.3	27.90	23.34	0.53	73.8	3.4	194.7
197.9	27.86	23.25	1.69	77.1	3.4	194.7
206.4	27.83	23.18	1.86	80.5	3.4	194.7
214.0	27.81	23.11	2.02	83.4	2.9	184.3
221.4	27.80	23.05	2.18	86.3	2.9	184.3
228.8	27.79	23.00	2.34	89.2	2.9	184.3
237.0	27.76	22.94	2.53	92.4	3.4	194.7
245.6	27.74	22.89	2.73	95.7	3.4	194.7
254.1	27.72	22.84	2.93	99.0	3.4	194.7
256.6	27.71	22.82	2.99	100.0	3.4	194.7

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Tank Capacity Tables

SW BALLAST TANK No. 6 PORT

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	0.0
46.1	28.19	-30.86	0.25	5.2	368.7	1474.7
91.0	28.19	-30.87	0.50	10.3	367.0	1429.6
133.4	28.18	-30.90	0.74	15.0	343.9	1423.5
152.8	28.18	-31.03	0.86	17.2	150.1	935.0
171.0	28.18	-31.13	1.01	19.3	150.1	935.0
189.2	28.18	-31.22	1.18	21.3	150.1	935.0
207.4	28.19	-31.29	1.36	23.4	150.1	935.0
225.6	28.19	-31.35	1.55	25.4	150.1	935.0
243.8	28.19	-31.40	1.75	27.5	150.1	935.0
262.0	28.19	-31.45	1.96	29.5	150.1	935.0
280.2	28.19	-31.48	2.18	31.6	150.1	935.0
298.4	28.19	-31.52	2.39	33.7	150.1	935.0
316.6	28.19	-31.55	2.62	35.7	150.1	935.0
334.8	28.19	-31.57	2.84	37.8	150.1	935.0
353.1	28.19	-31.60	3.07	39.8	150.1	935.0
371.3	28.19	-31.62	3.30	41.9	150.1	935.0
389.5	28.19	-31.64	3.53	43.9	150.1	935.0
407.7	28.19	-31.65	3.76	46.0	150.1	935.0
425.9	28.19	-31.67	4.00	48.0	150.1	935.0
444.1	28.19	-31.68	4.23	50.1	150.1	935.0
462.3	28.19	-31.70	4.47	52.1	150.1	935.0
480.5	28.19	-31.71	4.71	54.2	150.1	935.0
498.7	28.19	-31.72	4.95	56.2	150.1	935.0
516.9	28.19	-31.73	5.19	58.3	150.1	935.0
523.9	28.19	-31.74	5.28	59.1	150.1	935.0

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Tank Capacity Tables

SW BALLAST TANK No. 6 STBD

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	
46.1	28.19	30.86	0.25	5.2	368.7	1474.7
91.0	28.19	30.87	0.50	10.3	367.0	1429.6
133.4	28.18	30.90	0.74	15.0	343.9	1423.5
152.8	28.18	31.03	0.86	17.2	150.1	935.0
171.0	28.18	31.13	1.01	19.3	150.1	935.0
189.2	28.18	31.22	1.18	21.3	150.1	935.0
207.4	28.19	31.29	1.36	23.4	150.1	935.0
225.6	28.19	31.35	1.55	25.4	150.1	935.0
243.8	28.19	31.40	1.75	27.5	150.1	935.0
262.0	28.19	31.45	1.96	29.5	150.1	935.0
280.2	28.19	31.48	2.18	31.6	150.1	935.0
298.4	28.19	31.52	2.39	33.7	150.1	935.0
316.6	28.19	31.55	2.62	35.7	150.1	935.0
334.8	28.19	31.57	2.84	37.8	150.1	935.0
353.1	28.19	31.60	3.07	39.8	150.1	935.0
371.3	28.19	31.62	3.30	41.9	150.1	935.0
389.5	28.19	31.64	3.53	43.9	150.1	935.0
407.7	28.19	31.65	3.76	46.0	150.1	935.0
425.9	28.19	31.67	4.00	48.0	150.1	935.0
444.1	28.19	31.68	4.23	50.1	150.1	935.0
462.3	28.19	31.70	4.47	52.1	150.1	935.0
480.5	28.19	31.71	4.71	54.2	150.1	935.0
498.7	28.19	31.72	4.95	56.2	150.1	935.0
516.9	28.19	31.73	5.19	58.3	150.1	935.0
523.9	28.19	31.74	5.28	59.1	150.1	935.0

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Tank Capacity Tables

SW BALLAST TANK No. 7 PORT

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	0.0
21.1	27.16	-36.02	0.26	3.8	58.8	560.9
43.7	27.07	-36.09	0.51	7.9	65.4	577.0
66.5	27.02	-36.12	0.77	12.0	66.8	580.2
89.3	27.00	-36.14	1.02	16.1	66.8	580.3
112.2	26.98	-36.15	1.27	20.2	66.8	581.2
135.0	26.97	-36.16	1.52	24.3	66.9	582.3
157.9	26.97	-36.16	1.77	28.4	66.9	582.4
180.7	26.96	-36.17	2.02	32.6	66.9	582.4
203.6	26.96	-36.17	2.27	36.7	66.9	582.4
226.4	26.95	-36.17	2.52	40.8	66.9	582.4
249.3	26.95	-36.17	2.77	44.9	66.9	582.4
272.1	26.95	-36.17	3.02	49.0	66.9	582.4
295.0	26.95	-36.18	3.27	53.1	66.9	582.4
317.9	26.95	-36.18	3.52	57.3	66.9	582.4
340.7	26.95	-36.18	3.77	61.4	66.9	582.3
363.6	26.94	-36.18	4.02	65.5	66.9	582.3
386.4	26.94	-36.18	4.27	69.6	66.9	582.2
409.3	26.94	-36.18	4.52	73.7	66.9	582.1
432.1	26.94	-36.18	4.77	77.8	66.9	581.9
455.0	26.94	-36.18	5.02	82.0	66.9	581.8
477.9	26.94	-36.18	5.27	86.1	66.9	581.7
500.7	26.94	-36.18	5.52	90.2	66.9	581.6
523.6	26.94	-36.18	5.77	94.3	66.9	581.5
546.4	26.94	-36.18	6.02	98.4	66.9	581.5
555.2	26.94	-36.18	6.12	100.0	66.9	581.5

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Tank Capacity Tables

SW BALLAST TANK No. 7 STBD

Volume	LCG	TCG	VCG	%	I _{trans}	I _{long}
0.0			0.00	0.0	0.0	
21.1	27.16	36.02	0.26	3.8	58.8	560.9
43.7	27.07	36.09	0.51	7.9	65.4	577.0
66.5	27.02	36.12	0.77	12.0	66.8	580.2
89.3	27.00	36.14	1.02	16.1	66.8	580.3
112.2	26.98	36.15	1.27	20.2	66.8	581.2
135.0	26.97	36.16	1.52	24.3	66.9	582.3
157.9	26.97	36.16	1.77	28.4	66.9	582.4
180.7	26.96	36.17	2.02	32.6	66.9	582.4
203.6	26.96	36.17	2.27	36.7	66.9	582.4
226.4	26.95	36.17	2.52	40.8	66.9	582.4
249.3	26.95	36.17	2.77	44.9	66.9	582.4
272.1	26.95	36.17	3.02	49.0	66.9	582.4
295.0	26.95	36.18	3.27	53.1	66.9	582.4
317.9	26.95	36.18	3.52	57.3	66.9	582.4
340.7	26.95	36.18	3.77	61.4	66.9	582.4
363.6	26.94	36.18	4.02	65.5	66.9	582.3
386.4	26.94	36.18	4.27	69.6	66.9	582.3
409.3	26.94	36.18	4.52	73.7	66.9	582.2
432.1	26.94	36.18	4.77	77.8	66.9	582.1
455.0	26.94	36.18	5.02	82.0	66.9	581.9
477.9	26.94	36.18	5.27	86.1	66.9	581.8
500.7	26.94	36.18	5.52	90.2	66.9	581.7
523.6	26.94	36.18	5.77	94.3	66.9	581.6
546.4	26.94	36.18	6.02	98.4	66.9	581.5
555.2	26.94	36.18	6.12	100.0	66.9	581.5

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Tank Capacity Tables

SW BALLAST TANK No. 11 PORT

Volume	LCG	TCG	VCG	%	I _{trans}	I _{long}
0.0			0.00	0.0	0.0	0.0
31.8	51.05	-30.48	0.26	4.9	238.2	652.2
66.4	51.05	-30.62	0.51	10.3	273.8	683.3
102.1	51.05	-30.70	0.77	15.8	286.4	693.6
137.9	51.05	-30.74	1.03	21.4	286.7	693.9
173.8	51.05	-30.76	1.28	27.0	286.7	693.9
209.6	51.05	-30.78	1.53	32.5	286.7	693.9
245.5	51.05	-30.79	1.78	38.1	286.7	693.9
281.3	51.05	-30.80	2.03	43.6	286.7	693.9
317.2	51.05	-30.81	2.28	49.2	286.7	693.9
353.0	51.05	-30.81	2.53	54.8	286.7	693.9
388.9	51.05	-30.82	2.78	60.3	286.7	693.9
424.7	51.05	-30.82	3.03	65.9	286.7	693.9
460.6	51.05	-30.83	3.28	71.4	286.7	693.9
496.4	51.05	-30.83	3.54	77.0	286.7	693.9
532.0	51.05	-30.83	3.79	82.5	286.7	693.9
568.0	51.05	-30.83	4.03	88.1	280.8	689.0
603.1	51.05	-30.83	4.28	93.5	250.4	663.2
636.0	51.05	-30.82	4.51	98.7	187.0	601.7
644.7	51.05	-30.81	4.57	100.0	187.0	601.7

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Tank Capacity Tables

SW BALLAST TANK No. 11 STBD

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	
31.8	51.05	30.48	0.26	4.9	238.2	652.2
66.4	51.05	30.62	0.51	10.3	273.8	683.3
102.1	51.05	30.70	0.77	15.8	286.4	693.6
137.9	51.05	30.74	1.03	21.4	286.7	693.9
173.8	51.05	30.76	1.28	27.0	286.7	693.9
209.6	51.05	30.78	1.53	32.5	286.7	693.9
245.5	51.05	30.79	1.78	38.1	286.7	693.9
281.3	51.05	30.80	2.03	43.6	286.7	693.9
317.2	51.05	30.81	2.28	49.2	286.7	693.9
353.0	51.05	30.81	2.53	54.8	286.7	693.9
388.9	51.05	30.82	2.78	60.3	286.7	693.9
424.7	51.05	30.82	3.03	65.9	286.7	693.9
460.6	51.05	30.83	3.28	71.4	286.7	693.9
496.4	51.05	30.83	3.54	77.0	286.7	693.9
532.0	51.05	30.83	3.79	82.5	286.7	693.9
568.0	51.05	30.83	4.03	88.1	280.8	689.0
603.1	51.05	30.83	4.28	93.5	250.4	663.2
636.0	51.05	30.82	4.51	98.7	187.0	601.7
644.7	51.05	30.81	4.57	100.0	187.0	601.7

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Assinatura: [illegible]

Tank Capacity Tables

SW BALLAST TANK No. 13 PORT

Volume	LCG	TCG	VCG	%	I _{trans}	I _{long}
0.0			0.00	0.0	0.0	0.0
31.8	61.72	-30.48	0.26	4.9	238.2	652.2
66.4	61.72	-30.62	0.51	10.3	273.8	683.3
102.1	61.72	-30.70	0.77	15.8	286.4	693.6
137.9	61.72	-30.74	1.03	21.4	286.7	693.9
173.8	61.72	-30.76	1.28	27.0	286.7	693.9
209.6	61.72	-30.78	1.53	32.5	286.7	693.9
245.5	61.72	-30.79	1.78	38.1	286.7	693.9
281.3	61.72	-30.80	2.03	43.6	286.7	693.9
317.2	61.72	-30.81	2.28	49.2	286.7	693.9
353.0	61.72	-30.81	2.53	54.8	286.7	693.9
388.9	61.72	-30.82	2.78	60.3	286.7	693.9
424.7	61.72	-30.82	3.03	65.9	286.7	693.9
460.6	61.72	-30.83	3.28	71.4	286.7	693.9
496.4	61.72	-30.83	3.54	77.0	286.7	693.9
532.0	61.72	-30.83	3.79	82.5	286.7	693.9
568.0	61.72	-30.83	4.03	88.1	280.8	689.0
603.1	61.72	-30.83	4.28	93.5	250.4	663.2
636.0	61.72	-30.82	4.51	98.7	187.0	601.7
644.7	61.72	-30.81	4.57	100.0	187.0	601.7

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Tank Capacity Tables

SW BALLAST TANK No. 13 STBD

Volume	LCG	TCG	VCG	%	I _{trans}	I _{long}
0.0			0.00	0.0	0.0	
31.8	61.72	30.48	0.26	4.9	238.2	652.2
66.4	61.72	30.62	0.51	10.3	273.8	683.3
102.1	61.72	30.70	0.77	15.8	286.4	693.6
137.9	61.72	30.74	1.03	21.4	286.7	693.9
173.8	61.72	30.76	1.28	27.0	286.7	693.9
209.6	61.72	30.78	1.53	32.5	286.7	693.9
245.5	61.72	30.79	1.78	38.1	286.7	693.9
281.3	61.72	30.80	2.03	43.6	286.7	693.9
317.2	61.72	30.81	2.28	49.2	286.7	693.9
353.0	61.72	30.81	2.53	54.8	286.7	693.9
388.9	61.72	30.82	2.78	60.3	286.7	693.9
424.7	61.72	30.82	3.03	65.9	286.7	693.9
460.6	61.72	30.83	3.28	71.4	286.7	693.9
496.4	61.72	30.83	3.54	77.0	286.7	693.9
532.0	61.72	30.83	3.79	82.5	286.7	693.9
568.0	61.72	30.83	4.03	88.1	280.8	689.0
603.1	61.72	30.83	4.28	93.5	250.4	663.2
636.0	61.72	30.82	4.51	98.7	187.0	601.7
644.7	61.72	30.81	4.57	100.0	187.0	601.7

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Data: 09/05/2013 14:00:00

Tank Capacity Tables

SW BALLAST TANK No. 16 PORT

Volume	LCG	TCG	VCG	%	I _{trans}	I _{long}
0.0			0.00	0.0	0.0	0.0
39.2	84.85	-24.30	0.26	15.7	289.0	1250.8
81.5	84.80	-24.14	0.51	32.6	316.1	1247.1
124.6	84.76	-24.05	0.77	49.9	330.9	1269.0
133.7	84.80	-23.90	0.83	53.6	2.9	184.3
141.1	84.83	-23.77	0.91	56.5	2.9	184.3
148.5	84.86	-23.65	1.00	59.5	2.9	184.3
157.9	84.90	-23.53	1.12	63.2	3.4	194.7
165.4	84.94	-23.42	1.25	66.3	3.4	194.7
174.0	84.98	-23.32	1.40	69.7	3.4	194.7
182.5	85.01	-23.22	1.56	73.1	3.4	194.7
191.0	85.04	-23.14	1.72	76.5	3.4	194.7
199.6	85.07	-23.07	1.90	79.9	3.4	194.7
207.2	85.09	-23.00	2.06	83.0	2.9	184.3
214.6	85.10	-22.95	2.22	85.9	2.9	184.3
221.9	85.11	-22.89	2.38	88.9	2.9	184.3
230.1	85.12	-22.84	2.58	92.2	3.4	194.7
238.7	85.15	-22.79	2.78	95.6	3.4	194.7
247.2	85.16	-22.74	2.98	99.0	3.4	194.7
249.7	85.17	-22.72	3.04	100.0	3.4	194.7

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Tank Capacity Tables

SW BALLAST TANK No. 16 STBD

Volume	LCG	TCG	VCG	%	I _{trans}	I _{long}
0.0			0.00	0.0	0.0	
39.2	84.85	24.30	0.26	15.7	289.0	1250.8
81.5	84.80	24.14	0.51	32.6	316.1	1247.1
124.6	84.76	24.05	0.77	49.9	330.9	1269.0
133.7	84.80	23.90	0.83	53.6	2.9	184.3
141.1	84.83	23.77	0.91	56.5	2.9	184.3
148.5	84.86	23.65	1.00	59.5	2.9	184.3
157.9	84.90	23.53	1.12	63.2	3.4	194.7
165.4	84.94	23.42	1.25	66.3	3.4	194.7
174.0	84.98	23.32	1.40	69.7	3.4	194.7
182.5	85.01	23.22	1.56	73.1	3.4	194.7
191.0	85.04	23.14	1.72	76.5	3.4	194.7
199.6	85.07	23.07	1.90	79.9	3.4	194.7
207.2	85.09	23.00	2.06	83.0	2.9	184.3
214.6	85.10	22.95	2.22	85.9	2.9	184.3
221.9	85.11	22.89	2.38	88.9	2.9	184.3
230.1	85.12	22.84	2.58	92.2	3.4	194.7
238.7	85.15	22.79	2.78	95.6	3.4	194.7
247.2	85.16	22.74	2.98	99.0	3.4	194.7
249.7	85.17	22.72	3.04	100.0	3.4	194.7

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Tank Capacity Tables

SW BALLAST TANK No. 17 PORT

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	0.0
46.1	84.58	-30.86	0.25	8.8	386.7	1474.7
91.0	84.58	-30.87	0.50	17.4	367.0	1429.6
133.4	84.60	-30.90	0.74	25.5	343.9	1404.1
152.8	84.59	-31.03	0.86	29.2	150.1	935.0
171.0	84.59	-31.13	1.01	32.6	150.1	935.0
189.2	84.59	-31.22	1.18	36.1	150.1	935.0
207.4	84.59	-31.29	1.36	39.6	150.1	935.0
225.6	84.59	-31.35	1.55	43.1	150.1	935.0
243.8	84.59	-31.40	1.75	46.5	150.1	935.0
262.0	84.59	-31.45	1.96	50.0	150.1	935.0
280.2	84.59	-31.48	2.18	53.5	150.1	935.0
298.4	84.59	-31.52	2.39	57.0	150.1	935.0
316.6	84.59	-31.55	2.62	60.4	150.1	935.0
334.8	84.59	-31.57	2.84	63.9	150.1	935.0
353.1	84.59	-31.60	3.07	67.4	150.1	935.0
371.3	84.59	-31.62	3.30	70.9	150.1	935.0
389.5	84.59	-31.64	3.53	74.3	150.1	935.0
407.7	84.59	-31.65	3.76	77.8	150.1	935.0
425.9	84.59	-31.67	4.00	81.3	150.1	935.0
444.1	84.59	-31.68	4.23	84.8	150.1	935.0
462.3	84.59	-31.70	4.47	88.2	150.1	935.0
480.5	84.59	-31.71	4.71	91.7	150.1	935.0
498.7	84.59	-31.72	4.95	95.2	150.1	935.0
516.9	84.59	-31.73	5.19	98.7	150.1	935.0
523.9	84.59	-31.74	5.28	100.0	150.1	935.0

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Tank Capacity Tables

SW BALLAST TANK No. 17 STBD

Volume	LCG	TCG	VCG	%	I _{trans}	I _{long}
0.0			0.00	0.0	0.0	
46.1	84.58	30.86	0.25	8.8	386.7	1474.7
91.0	84.58	30.87	0.50	17.4	367.0	1429.6
133.4	84.60	30.90	0.74	25.5	343.9	1404.1
152.8	84.59	31.03	0.86	29.2	150.1	935.0
171.0	84.59	31.13	1.01	32.6	150.1	935.0
189.2	84.59	31.22	1.18	36.1	150.1	935.0
207.4	84.59	31.29	1.36	39.6	150.1	935.0
225.6	84.59	31.35	1.55	43.1	150.1	935.0
243.8	84.59	31.40	1.75	46.5	150.1	935.0
262.0	84.59	31.45	1.96	50.0	150.1	935.0
280.2	84.59	31.48	2.18	53.5	150.1	935.0
298.4	84.59	31.52	2.39	57.0	150.1	935.0
316.6	84.59	31.55	2.62	60.4	150.1	935.0
334.8	84.59	31.57	2.84	63.9	150.1	935.0
353.1	84.59	31.60	3.07	67.4	150.1	935.0
371.3	84.59	31.62	3.30	70.9	150.1	935.0
389.5	84.59	31.64	3.53	74.3	150.1	935.0
407.7	84.59	31.65	3.76	77.8	150.1	935.0
425.9	84.59	31.67	4.00	81.3	150.1	935.0
444.1	84.59	31.68	4.23	84.8	150.1	935.0
462.3	84.59	31.70	4.47	88.2	150.1	935.0
480.5	84.59	31.71	4.71	91.7	150.1	935.0
498.7	84.59	31.72	4.95	95.2	150.1	935.0
516.9	84.59	31.73	5.19	98.7	150.1	935.0
523.9	84.59	31.74	5.28	100.0	150.1	935.0

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Tank Capacity Tables



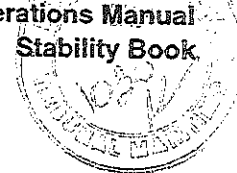
SW BALLAST TANK No. 18 PORT

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	0.0
21.1	85.61	-35.97	0.26	3.8	58.8	560.3
43.7	85.71	-36.09	0.51	7.9	65.5	577.8
66.5	85.75	-36.12	0.77	12.0	66.9	581.7
89.4	85.78	-36.14	1.02	16.1	66.9	581.7
112.2	85.79	-36.15	1.27	20.2	66.9	581.7
135.1	85.80	-36.16	1.52	24.3	66.9	581.7
157.9	85.81	-36.16	1.77	28.4	66.9	581.7
180.8	85.82	-36.17	2.02	32.6	66.9	581.7
203.6	105.82	-36.17	2.27	36.7	66.9	581.7
226.5	85.82	-36.16	2.52	40.8	66.9	581.7
249.3	85.82	-36.17	2.77	44.9	66.9	581.7
272.2	85.83	-36.17	3.02	49.0	66.9	581.7
295.0	85.83	-36.18	3.27	53.1	66.9	581.7
317.9	85.83	-36.18	3.52	57.3	66.9	581.7
340.7	85.83	-36.18	3.77	61.4	66.9	581.7
363.6	85.83	-36.18	4.02	65.5	66.9	581.7
386.4	85.83	-36.18	4.27	69.6	66.9	581.7
409.3	85.83	-36.18	4.52	73.7	66.9	581.7
432.1	85.84	-36.18	4.77	77.8	66.9	581.6
455.0	85.84	-36.18	5.02	82.0	66.9	581.7
477.8	85.84	-36.18	5.27	86.1	66.9	581.6
500.7	85.84	-36.18	5.52	90.2	66.9	581.6
523.5	85.84	-36.18	5.77	94.3	66.9	581.6
546.4	85.84	36.18	6.02	98.4	66.9	581.6
555.2	85.84	-36.18	6.12	100.0	66.9	581.6

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Tank Capacity Tables

SW BALLAST TANK No. 18 STBD

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	
21.1	85.61	35.97	0.26	3.8	58.8	560.3
43.7	85.71	36.09	0.51	7.9	65.5	577.8
66.5	85.75	36.12	0.77	12.0	66.9	581.7
89.4	85.78	36.14	1.02	16.1	66.9	581.7
112.2	85.79	36.15	1.27	20.2	66.9	581.7
135.1	85.80	36.16	1.52	24.3	66.9	581.7
157.9	85.81	36.16	1.77	28.4	66.9	581.7
180.8	85.82	36.17	2.02	32.6	66.9	581.7
203.6	105.82	36.17	2.27	36.7	66.9	581.7
226.5	85.82	36.16	2.52	40.8	66.9	581.7
249.3	85.82	36.17	2.77	44.9	66.9	581.7
272.2	85.83	36.17	3.02	49.0	66.9	581.7
295.0	85.83	36.18	3.27	53.1	66.9	581.7
317.9	85.83	36.18	3.52	57.3	66.9	581.7
340.7	85.83	36.18	3.77	61.4	66.9	581.7
363.6	85.83	36.18	4.02	65.5	66.9	581.7
386.4	85.83	36.18	4.27	69.6	66.9	581.7
409.3	85.83	36.18	4.52	73.7	66.9	581.7
432.1	85.84	36.18	4.77	77.8	66.9	581.6
455.0	85.84	36.18	5.02	82.0	66.9	581.7
477.8	85.84	36.18	5.27	86.1	66.9	581.6
500.7	85.84	36.18	5.52	90.2	66.9	581.6
523.5	85.84	36.18	5.77	94.3	66.9	581.6
546.4	85.84	-36.18	6.02	98.4	66.9	581.6
555.2	85.84	36.18	6.12	100.0	66.9	581.6

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DE 01/01/2010
DE 01/01/2010

Tank Capacity Tables

SW BALLAST TANK No. 19 PORT

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	0.0
30.7	96.01	-30.86	0.25	4.2	245.8	437.0
61.5	96.01	-30.86	0.50	8.4	245.8	437.0
92.2	96.01	-30.86	0.75	12.6	245.8	437.0
122.9	96.01	-30.86	1.00	16.9	245.8	437.0
153.6	96.01	-30.86	1.25	21.1	245.8	437.0
184.4	96.01	-30.86	1.50	25.3	183.8	217.3
208.3	96.07	-30.88	1.70	28.6	183.8	217.3
232.1	96.12	-30.90	1.91	31.9	183.8	217.3
256.0	96.16	-30.91	2.13	35.1	245.8	437.0
286.8	96.15	-30.90	2.41	39.3	245.8	437.0
317.5	96.14	-30.90	2.69	43.6	245.8	437.0
348.2	96.12	-30.90	2.96	47.8	245.8	437.0
378.9	96.12	-30.89	3.22	52.0	245.8	437.0
409.7	96.11	-30.89	3.49	56.2	245.8	437.0
440.4	96.10	-30.89	3.75	60.4	245.8	437.0
471.1	96.10	-30.89	4.01	64.6	245.8	437.0
501.9	96.09	-30.88	4.27	68.9	245.8	437.0
532.6	96.09	-30.88	4.53	73.1	245.8	437.0
563.3	96.08	-30.88	4.79	77.3	245.8	437.0
594.0	96.08	-30.88	5.04	81.5	245.8	437.0
624.8	96.07	-30.88	5.30	85.7	245.8	437.0
655.5	96.07	-30.88	5.56	89.9	245.8	437.0
686.2	96.07	-30.88	5.81	94.2	245.8	437.0
716.9	96.07	-30.88	6.06	98.4	245.8	437.0
728.7	96.07	-30.88	6.16	100.0	245.8	437.0

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Tank Capacity Tables

SW BALLAST TANK No. 19 STBD

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	
30.7	96.01	30.86	0.25	4.2	245.8	437.0
61.5	96.01	30.86	0.50	8.4	245.8	437.0
92.2	96.01	30.86	0.75	12.6	245.8	437.0
122.9	96.01	30.86	1.00	16.9	245.8	437.0
153.6	96.01	30.86	1.25	21.1	245.8	437.0
184.4	96.01	30.86	1.50	25.3	183.8	217.3
208.3	96.07	30.88	1.70	28.6	183.8	217.3
232.1	96.12	30.90	1.91	31.9	183.8	217.3
256.0	96.16	30.91	2.13	35.1	245.8	437.0
286.8	96.15	30.90	2.41	39.3	245.8	437.0
317.5	96.14	30.90	2.69	43.6	245.8	437.0
348.2	96.12	30.90	2.96	47.8	245.8	437.0
378.9	96.12	30.89	3.22	52.0	245.8	437.0
409.7	96.11	30.89	3.49	56.2	245.8	437.0
440.4	96.10	30.89	3.75	60.4	245.8	437.0
471.1	96.10	30.89	4.01	64.6	245.8	437.0
501.9	96.09	30.88	4.27	68.9	245.8	437.0
532.6	96.09	30.88	4.53	73.1	245.8	437.0
563.3	96.08	30.88	4.79	77.3	245.8	437.0
594.0	96.08	30.88	5.04	81.5	245.8	437.0
624.8	96.07	30.88	5.30	85.7	245.8	437.0
655.5	96.07	30.88	5.56	89.9	245.8	437.0
686.2	96.07	30.88	5.81	94.2	245.8	437.0
716.9	96.07	30.88	6.06	98.4	245.8	437.0
728.7	96.07	30.88	6.16	100.0	245.8	437.0

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DEPARTAMENTO DE CONTROLE DE QUALIDADE
DO PETRÓLEO
BRASÍLIA - DF

Tank Capacity Tables

SW BALLAST TANK No. 20 PORT

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	0.0
26.0	98.47	-36.09	0.26	3.4	80.0	1030.0
56.0	98.53	-36.23	0.53	7.3	99.3	1132.8
87.6	98.57	-36.30	0.79	11.4	106.4	1173.1
119.6	98.59	-36.34	1.04	15.6	106.6	1179.1
151.6	98.61	-36.40	1.30	19.7	106.6	1179.1
183.5	98.62	-36.39	1.55	23.9	101.4	1079.7
214.4	98.66	-36.40	1.80	27.9	101.4	1079.7
245.3	98.69	-36.41	2.04	31.9	101.4	1079.8
276.1	98.71	-36.43	2.29	35.9	106.6	1179.2
308.1	98.71	-36.43	2.54	40.1	106.6	1179.2
340.1	98.70	-36.43	2.80	44.3	106.6	1179.1
372.1	98.70	-36.44	3.05	48.4	106.6	1179.1
404.1	98.70	-36.44	3.31	52.6	106.6	1179.1
436.1	98.70	-36.44	3.56	56.8	106.6	1179.1
468.0	98.69	-36.44	3.81	60.9	106.6	1179.1
500.0	98.69	-36.44	4.06	65.1	106.6	1179.1
532.0	98.69	-36.44	4.31	69.3	106.6	1179.1
564.0	98.69	-36.44	4.57	73.4	106.6	1179.1
596.0	98.69	-36.44	4.82	77.6	106.6	1179.1
628.0	98.69	-36.45	5.07	81.7	106.6	1179.1
660.0	98.69	-36.45	5.32	85.9	106.6	1179.1
691.9	98.68	-36.45	5.57	90.1	106.6	1179.1
723.9	98.68	-36.45	5.82	94.2	106.6	1179.1
755.9	98.68	-36.45	6.07	98.4	106.6	1179.1
768.2	98.68	-36.45	6.17	100.0	106.6	1179.1

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Revisado por: [illegible]
Aprobado por: [illegible]

Tank Capacity Tables

SW BALLAST TANK No. 20 STBD

Volume	LCG	TCG	VCG	%	I _{trans}	I _{long}
0.0			0.00	0.0	0.0	
26.0	98.47	36.09	0.26	3.4	80.0	1030.0
56.0	98.53	36.23	0.53	7.3	99.3	1132.8
87.6	98.57	36.30	0.79	11.4	106.4	1173.1
119.6	98.59	36.34	1.04	15.6	106.6	1179.1
151.6	98.61	36.40	1.30	19.7	106.6	1179.1
183.5	98.62	36.39	1.55	23.9	101.4	1079.7
214.4	98.66	36.40	1.80	27.9	101.4	1079.7
245.3	98.69	36.41	2.04	31.9	101.4	1079.8
276.1	98.71	36.43	2.29	35.9	106.6	1179.2
308.1	98.71	36.43	2.54	40.1	106.6	1179.2
340.1	98.70	36.43	2.80	44.3	106.6	1179.1
372.1	98.70	36.44	3.05	48.4	106.6	1179.1
404.1	98.70	36.44	3.31	52.6	106.6	1179.1
436.1	98.70	36.44	3.56	56.8	106.6	1179.1
468.0	98.69	36.44	3.81	60.9	106.6	1179.1
500.0	98.69	36.44	4.06	65.1	106.6	1179.1
532.0	98.69	36.44	4.31	69.3	106.6	1179.1
564.0	98.69	36.44	4.57	73.4	106.6	1179.1
596.0	98.69	36.44	4.82	77.6	106.6	1179.1
628.0	98.69	36.45	5.07	81.7	106.6	1179.1
660.0	98.69	36.45	5.32	85.9	106.6	1179.1
691.9	98.68	36.45	5.57	90.1	106.6	1179.1
723.9	98.68	36.45	5.82	94.2	106.6	1179.1
755.9	98.68	36.45	6.07	98.4	106.6	1179.1
768.2	98.68	36.45	6.17	100.0	106.6	1179.1

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Tank Capacity Tables

SW BALLAST TANK No. 21 PORT

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			0.00	0.0	0.0	0.0
36.2	102.44	-24.67	0.26	3.8	289.2	2542.3
78.8	102.49	-24.50	0.53	8.2	345.1	2864.7
124.0	102.54	-24.46	0.79	12.9	365.6	3015.9
156.2	103.18	-24.44	0.99	16.2	194.5	729.2
188.0	103.64	-24.47	1.20	19.5	195.1	739.1
219.9	103.97	-24.49	1.43	22.8	195.1	741.9
251.8	104.22	-24.52	1.66	26.1	195.1	742.1
283.8	104.41	-24.53	1.89	29.4	195.1	742.1
315.7	104.57	-24.57	2.13	32.8	195.1	742.0
347.6	104.69	-24.55	2.37	36.1	195.1	742.0
379.5	104.79	-24.68	2.61	39.4	195.1	742.1
411.4	104.88	-24.56	2.86	42.7	195.1	742.1
443.4	104.96	-24.57	3.10	46.0	195.1	742.1
475.3	105.02	-24.57	3.35	49.3	195.1	742.0
507.2	105.08	-24.58	3.59	52.6	195.1	742.0
539.1	105.13	-24.58	3.84	55.9	195.1	742.0
571.0	105.18	-24.59	4.09	59.3	195.1	742.0
603.0	105.21	-24.59	4.33	62.6	195.1	742.0
653.2	104.99	-24.57	4.71	67.8	444.0	4030.0
710.9	104.71	-24.55	5.12	73.8	444.0	4030.0
768.5	104.47	-24.53	5.51	79.8	444.0	4030.0
826.2	104.26	-24.51	5.87	85.7	444.0	4030.0
883.9	104.08	-24.50	6.22	91.7	444.0	4030.0
941.5	103.92	-24.49	6.56	97.7	444.0	4030.0
963.7	103.87	-24.48	6.69	100.0	444.0	4030.0

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Tank Capacity Tables

SW BALLAST TANK No. 21 STBD

Volume	LCG	TCG	VCG	%	I _{trans}	I _{long}
0.0			0.00	0.0	0.0	
36.2	102.44	24.67	0.26	3.8	289.2	2542.3
78.8	102.49	24.50	0.53	8.2	345.1	2864.7
124.0	102.54	24.46	0.79	12.9	365.6	3015.9
156.2	103.18	24.44	0.99	16.2	194.5	729.2
188.0	103.64	24.47	1.20	19.5	195.1	739.1
219.9	103.97	24.49	1.43	22.8	195.1	741.9
251.8	104.22	24.52	1.66	26.1	195.1	742.1
283.8	104.41	24.53	1.89	29.4	195.1	742.1
315.7	104.57	24.57	2.13	32.8	195.1	742.0
347.6	104.69	24.55	2.37	36.1	195.1	742.0
379.5	104.79	24.68	2.61	39.4	195.1	742.1
411.4	104.88	24.56	2.86	42.7	195.1	742.1
443.4	104.96	24.57	3.10	46.0	195.1	742.1
475.3	105.02	24.57	3.35	49.3	195.1	742.0
507.2	105.08	24.58	3.59	52.6	195.1	742.0
539.1	105.13	24.58	3.84	55.9	195.1	742.0
571.0	105.18	24.59	4.09	59.3	195.1	742.0
603.0	105.21	24.59	4.33	62.6	195.1	742.0
653.2	104.99	24.57	4.71	67.8	444.0	4030.0
710.9	104.71	24.55	5.12	73.8	444.0	4030.0
768.5	104.47	24.53	5.51	79.8	444.0	4030.0
826.2	104.26	24.51	5.87	85.7	444.0	4030.0
883.9	104.08	24.50	6.22	91.7	444.0	4030.0
941.5	103.92	24.49	6.56	97.7	444.0	4030.0
963.7	103.87	24.48	6.69	100.0	444.0	4030.0

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Tank Capacity Tables

SW BALLAST TANK No. 22 PORT

Volume	LCG	TCG	VCG	%	I _{trans}	I _{long}
0.0			0.00	0.0	0.0	0.0
39.6	106.41	-30.81	0.25	3.7	359.5	955.6
81.4	106.51	-30.90	0.51	7.6	400.8	998.7
124.5	106.57	-30.97	0.77	11.7	427.9	1023.9
168.2	106.61	-31.01	1.02	15.8	442.6	1038.7
212.2	106.64	-31.05	1.28	19.9	447.2	1045.8
256.3	106.67	-31.07	1.53	24.0	447.7	1047.5
300.4	106.68	-31.06	1.78	28.1	447.7	1047.5
344.5	106.70	-31.10	2.04	32.3	447.7	1047.5
388.6	106.70	-31.11	2.29	36.4	447.7	1047.5
432.7	106.71	-31.11	2.54	40.5	447.7	1047.5
476.9	106.72	-31.12	2.79	44.7	447.7	1047.5
521.0	106.72	-31.12	3.04	48.8	447.7	1047.5
565.1	106.73	-31.13	3.29	52.9	447.7	1047.5
609.2	106.73	-31.13	3.54	57.1	447.7	1047.5
653.3	106.73	-31.14	3.79	61.2	447.7	1047.5
697.4	106.74	-31.14	4.04	65.3	447.7	1047.5
741.6	106.74	-31.14	4.29	69.5	447.7	1047.5
785.7	106.74	-31.14	4.54	73.6	447.7	1047.5
829.8	106.74	-31.14	4.79	77.7	447.7	1047.5
873.9	106.74	-31.15	5.04	81.9	447.7	1047.5
918.0	106.75	-31.15	5.29	86.0	447.7	1047.5
962.1	106.75	-31.15	5.54	90.1	447.7	1047.5
1006.3	106.75	-31.15	5.79	94.3	447.7	1047.5
1050.4	106.75	-31.15	6.04	98.4	447.7	1047.5
1067.3	106.75	-31.15	6.14	100.0	447.7	1047.5

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Tank Capacity Tables

SW BALLAST TANK No. 22 STBD

Volume	LCG	TCG	VCG	%	I _{trans}	I _{long}
0.0			0.00	0.0	0.0	
39.6	106.41	30.81	0.25	3.7	359.5	955.6
81.4	106.51	30.90	0.51	7.6	400.8	998.7
124.5	106.57	30.97	0.77	11.7	427.9	1023.9
168.2	106.61	31.01	1.02	15.8	442.6	1038.7
212.2	106.64	31.05	1.28	19.9	447.2	1045.8
256.3	106.67	31.07	1.53	24.0	447.7	1047.5
300.4	106.68	31.06	1.78	28.1	447.7	1047.5
344.5	106.70	31.10	2.04	32.3	447.7	1047.5
388.6	106.70	31.11	2.29	36.4	447.7	1047.5
432.7	106.71	31.11	2.54	40.5	447.7	1047.5
476.9	106.72	31.12	2.79	44.7	447.7	1047.5
521.0	106.72	31.12	3.04	48.8	447.7	1047.5
565.1	106.73	31.13	3.29	52.9	447.7	1047.5
609.2	106.73	31.13	3.54	57.1	447.7	1047.5
653.3	106.73	31.14	3.79	61.2	447.7	1047.5
697.4	106.74	31.14	4.04	65.3	447.7	1047.5
741.6	106.74	31.14	4.29	69.5	447.7	1047.5
785.7	106.74	31.14	4.54	73.6	447.7	1047.5
829.8	106.74	31.14	4.79	77.7	447.7	1047.5
873.9	106.74	31.15	5.04	81.9	447.7	1047.5
918.0	106.75	31.15	5.29	86.0	447.7	1047.5
962.1	106.75	31.15	5.54	90.1	447.7	1047.5
1006.3	106.75	31.15	5.79	94.3	447.7	1047.5
1050.4	106.75	31.15	6.04	98.4	447.7	1047.5
1067.3	106.75	31.15	6.14	100.0	447.7	1047.5

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FOR CARLOS MONTES
DE 11/11/2010
LMS

50394

Volume	LCG	TCG	VCG	%	l_{trans}	l_{long}
0.0			12.19	0.0	0.0	0.0
43.7	28.02	-27.55	12.44	6.6	1895.9	1971.0
87.4	28.02	-27.55	12.69	13.1	1895.9	1971.0
131.0	28.02	-27.55	12.94	19.7	1895.9	1971.0
174.7	28.02	-27.55	13.19	26.2	1895.9	1971.0
218.4	28.02	-27.55	13.44	32.8	1895.9	1971.0
262.1	28.02	-27.55	13.69	39.4	1895.9	1971.0
305.7	28.02	-27.55	13.94	45.9	1895.9	1971.0
349.4	28.02	-27.55	14.19	52.5	1895.9	1971.0
393.1	28.02	-27.55	14.44	59.1	1895.9	1971.0
436.8	28.02	-27.55	14.69	65.6	1895.9	1971.0
480.4	28.02	-27.55	14.94	72.2	1895.9	1971.0
524.1	28.02	-27.55	15.19	78.7	1895.9	1971.0
567.8	28.02	-27.55	15.44	85.3	1895.9	1971.0
611.5	28.02	-27.55	15.69	91.9	1895.9	1971.0
655.1	28.02	-27.55	15.94	98.4	1895.9	1971.0
665.6	28.02	-27.55	16.00	100.0	1895.9	1971.0

#CÓPIA FIEL DO DOCUMENTO ORIGINAL

Tank Capacity Tables

SW BALLAST TANK No. 23 STBD

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			12.19	0.0	0.0	
43.7	28.02	27.55	12.44	6.6	1895.9	1971.0
87.4	28.02	27.55	12.69	13.1	1895.9	1971.0
131.0	28.02	27.55	12.94	19.7	1895.9	1971.0
174.7	28.02	27.55	13.19	26.2	1895.9	1971.0
218.4	28.02	27.55	13.44	32.8	1895.9	1971.0
262.1	28.02	27.55	13.69	39.4	1895.9	1971.0
305.7	28.02	27.55	13.94	45.9	1895.9	1971.0
349.4	28.02	27.55	14.19	52.5	1895.9	1971.0
393.1	28.02	27.55	14.44	59.1	1895.9	1971.0
436.8	28.02	27.55	14.69	65.6	1895.9	1971.0
480.4	28.02	27.55	14.94	72.2	1895.9	1971.0
524.1	28.02	27.55	15.19	78.7	1895.9	1971.0
567.8	28.02	27.55	15.44	85.3	1895.9	1971.0
611.5	28.02	27.55	15.69	91.9	1895.9	1971.0
655.1	28.02	27.55	15.94	98.4	1895.9	1971.0
665.6	28.02	27.55	16.00	100.0	1895.9	1971.0

ECOPAR Helado de leche
CASA DE LA LECHE
DISTRIBUIDOR

Tank Capacity Tables

SW BALLAST TANK No. 24 PORT

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			9.14	0.0	0.0	0.0
63.1	28.00	-26.33	9.39	6.4	1661.1	1847.5
126.2	28.00	-26.33	9.64	12.9	1661.1	1847.5
189.3	28.00	-26.33	9.89	19.3	1661.1	1847.5
252.4	28.00	-26.33	10.14	25.7	1661.1	1847.5
315.6	28.00	-26.33	10.39	32.2	1661.1	1847.5
378.7	28.00	-26.33	10.64	38.6	1661.1	1847.5
414.2	28.03	-26.38	10.79	42.2	525.8	558.2
446.8	28.05	-26.44	10.95	45.6	525.8	558.2
479.4	28.07	-26.48	11.11	48.9	525.8	558.2
512.0	28.09	-26.52	11.29	52.2	525.8	558.2
544.6	28.11	-26.56	11.48	55.5	525.8	558.2
577.2	28.12	-26.59	11.67	58.8	525.8	558.2
609.8	28.13	-26.62	11.87	62.2	525.8	558.2
642.4	28.15	-26.64	12.07	65.5	525.8	558.2
675.0	28.16	-26.66	12.28	68.8	525.8	558.2
707.5	28.17	-26.68	12.49	72.1	525.8	558.2
740.1	28.17	-26.70	12.71	75.5	525.8	558.2
772.7	28.18	-26.72	12.93	78.8	525.8	558.2
805.3	28.19	-26.74	13.15	82.1	525.8	558.2
837.9	28.20	-26.75	13.37	85.4	525.8	558.2
870.5	28.20	-26.76	13.60	88.8	525.8	558.2
903.1	28.21	-26.78	13.83	92.1	525.8	558.2
935.7	28.21	-26.79	14.05	95.4	525.8	558.2
968.3	28.22	-26.80	14.28	98.7	525.8	558.2
980.8	28.22	-26.80	14.37	100.0	525.8	558.2

EXEMPLAR DO DOCUMENTO ORIGINAL

Tank Capacity Tables

SW BALLAST TANK No. 24 STBD

Volume	LCG	TCG	VCG	%	I_{trans}	I_{long}
0.0			9.14	0.0	0.0	
63.1	28.00	26.33	9.39	6.4	1661.1	1847.5
126.2	28.00	26.33	9.64	12.9	1661.1	1847.5
189.3	28.00	26.33	9.89	19.3	1661.1	1847.5
252.4	28.00	26.33	10.14	25.7	1661.1	1847.5
315.6	28.00	26.33	10.39	32.2	1661.1	1847.5
378.7	28.00	26.33	10.64	38.6	1661.1	1847.5
414.2	28.03	26.38	10.79	42.2	525.8	558.2
446.8	28.05	26.44	10.95	45.6	525.8	558.2
479.4	28.07	26.48	11.11	48.9	525.8	558.2
512.0	28.09	26.52	11.29	52.2	525.8	558.2
544.6	28.11	26.56	11.48	55.5	525.8	558.2
577.2	28.12	26.59	11.67	58.8	525.8	558.2
609.8	28.13	26.62	11.87	62.2	525.8	558.2
642.4	28.15	26.64	12.07	65.5	525.8	558.2
675.0	28.16	26.66	12.28	68.8	525.8	558.2
707.5	28.17	26.68	12.49	72.1	525.8	558.2
740.1	28.17	26.70	12.71	75.5	525.8	558.2
772.7	28.18	26.72	12.93	78.8	525.8	558.2
805.3	28.19	26.74	13.15	82.1	525.8	558.2
837.9	28.20	26.75	13.37	85.4	525.8	558.2
870.5	28.20	26.76	13.60	88.8	525.8	558.2
903.1	28.21	26.78	13.83	92.1	525.8	558.2
935.7	28.21	26.79	14.05	95.4	525.8	558.2
968.3	28.22	26.80	14.28	98.7	525.8	558.2
980.8	28.22	26.80	14.37	100.0	525.8	558.2

COPIA FEITA DO DOCUMENTO ORIGINAL

Tank Capacity Tables

1012 K

SW BALLAST TANK No. 25 PORT

Volume	LCG	TCG	VCG	%	I _{trans}	I _{long}
0.0			12.19	0.0	0.0	0.0
43.7	84.76	-27.55	12.44	6.6	1895.8	1971.0
87.4	84.76	-27.55	12.69	13.1	1895.8	1971.0
131.0	84.76	-27.55	12.94	19.7	1895.8	1971.0
174.7	84.76	-27.55	13.19	26.2	1895.8	1971.0
218.4	84.76	-27.55	13.44	32.8	1895.8	1971.0
262.1	84.76	-27.55	13.69	39.4	1895.8	1971.0
305.7	84.76	-27.55	13.94	45.9	1895.8	1971.0
349.4	84.76	-27.55	14.19	52.5	1895.8	1971.0
393.1	84.76	-27.55	14.44	59.1	1895.8	1971.0
436.8	84.76	-27.55	14.69	65.6	1895.8	1971.0
480.4	84.76	-27.55	14.94	72.2	1895.8	1971.0
524.1	84.76	-27.55	15.19	78.7	1895.8	1971.0
567.8	84.76	-27.55	15.44	85.3	1895.8	1971.0
611.5	84.76	-27.55	15.69	91.9	1895.8	1971.0
655.1	84.76	-27.55	15.94	98.4	1895.8	1971.0
665.6	84.76	-27.55	16.00	100.0	1895.8	1971.0

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Tank Capacity Tables



SW BALLAST TANK No. 25 STBD

| Volume | LCG | TCG | VCG | % | l_{trans} | l_{long} |
|--------|-------|-------|-------|-------|-------------|------------|
| 0.0 | | | 12.19 | 0.0 | 0.0 | |
| 43.7 | 84.76 | 27.55 | 12.44 | 6.6 | 1895.8 | 1971.0 |
| 87.4 | 84.76 | 27.55 | 12.69 | 13.1 | 1895.8 | 1971.0 |
| 131.0 | 84.76 | 27.55 | 12.94 | 19.7 | 1895.8 | 1971.0 |
| 174.7 | 84.76 | 27.55 | 13.19 | 26.2 | 1895.8 | 1971.0 |
| 218.4 | 84.76 | 27.55 | 13.44 | 32.8 | 1895.8 | 1971.0 |
| 262.1 | 84.76 | 27.55 | 13.69 | 39.4 | 1895.8 | 1971.0 |
| 305.7 | 84.76 | 27.55 | 13.94 | 45.9 | 1895.8 | 1971.0 |
| 349.4 | 84.76 | 27.55 | 14.19 | 52.5 | 1895.8 | 1971.0 |
| 393.1 | 84.76 | 27.55 | 14.44 | 59.1 | 1895.8 | 1971.0 |
| 436.8 | 84.76 | 27.55 | 14.69 | 65.6 | 1895.8 | 1971.0 |
| 480.4 | 84.76 | 27.55 | 14.94 | 72.2 | 1895.8 | 1971.0 |
| 524.1 | 84.76 | 27.55 | 15.19 | 78.7 | 1895.8 | 1971.0 |
| 567.8 | 84.76 | 27.55 | 15.44 | 85.3 | 1895.8 | 1971.0 |
| 611.5 | 84.76 | 27.55 | 15.69 | 91.9 | 1895.8 | 1971.0 |
| 655.1 | 84.76 | 27.55 | 15.94 | 98.4 | 1895.8 | 1971.0 |
| 665.6 | 84.76 | 27.55 | 16.00 | 100.0 | 1895.8 | 1971.0 |

COPIA FIEL DO DOCUMENTO ORIGINAL

DE CARLOS MAGALHÃES
DATA: 10/10/2015

Tank Capacity Tables

SW BALLAST TANK No. 26 PORT

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|--------|-------|-------|-------------|------------|
| 0.0 | | | 9.14 | 0.0 | 0.0 | 0.0 |
| 63.1 | 84.77 | -26.33 | 9.39 | 6.4 | 1661.1 | 1847.4 |
| 126.2 | 84.77 | -26.33 | 9.64 | 12.9 | 1661.1 | 1847.4 |
| 189.3 | 84.77 | -26.33 | 9.89 | 19.3 | 1661.1 | 1847.4 |
| 252.4 | 84.77 | -26.33 | 10.14 | 25.7 | 1661.1 | 1847.4 |
| 315.6 | 84.77 | -26.33 | 10.39 | 32.2 | 1661.1 | 1847.4 |
| 378.7 | 84.77 | -26.33 | 10.64 | 38.6 | 1661.1 | 1847.4 |
| 414.2 | 84.75 | -26.38 | 10.79 | 42.2 | 525.8 | 558.3 |
| 446.8 | 84.73 | -26.44 | 10.95 | 45.6 | 525.8 | 558.3 |
| 479.4 | 84.70 | -26.48 | 11.11 | 48.9 | 525.8 | 558.3 |
| 512.0 | 84.69 | -26.52 | 11.29 | 52.2 | 525.8 | 558.3 |
| 544.6 | 84.67 | -26.56 | 11.48 | 55.5 | 525.8 | 558.3 |
| 577.2 | 84.66 | -26.59 | 11.67 | 58.8 | 525.8 | 558.3 |
| 609.8 | 84.64 | -26.62 | 11.87 | 62.2 | 525.8 | 558.3 |
| 642.4 | 84.63 | -26.64 | 12.07 | 65.5 | 525.8 | 558.3 |
| 675.0 | 84.62 | -26.66 | 12.28 | 68.8 | 525.8 | 558.3 |
| 707.5 | 84.61 | -26.68 | 12.49 | 72.1 | 525.8 | 558.3 |
| 740.1 | 84.60 | -26.70 | 12.71 | 75.5 | 525.8 | 558.3 |
| 772.7 | 84.60 | -26.72 | 12.93 | 78.8 | 525.8 | 558.3 |
| 805.3 | 84.59 | -26.74 | 13.15 | 82.1 | 525.8 | 558.3 |
| 837.9 | 84.58 | -26.75 | 13.37 | 85.4 | 525.8 | 558.3 |
| 870.5 | 84.58 | -26.76 | 13.60 | 88.8 | 525.8 | 558.3 |
| 903.1 | 84.57 | -26.78 | 13.83 | 92.1 | 525.8 | 558.3 |
| 935.7 | 84.56 | -26.79 | 14.05 | 95.4 | 525.8 | 558.3 |
| 968.3 | 84.56 | -26.80 | 14.28 | 98.7 | 525.8 | 558.3 |
| 980.8 | 84.56 | -26.80 | 14.37 | 100.0 | 525.8 | 558.3 |

ECUADOR DOCUMENTO ORIGINAL

Tank Capacity Tables



SW BALLAST TANK No. 26 STBD

| Volume | LCG | TCG | VCG | % | I _{trans} | I _{long} |
|--------|-------|-------|-------|-------|--------------------|-------------------|
| 0.0 | | | 9.14 | 0.0 | 0.0 | |
| 63.1 | 84.77 | 26.33 | 9.39 | 6.4 | 1661.1 | 1847.4 |
| 126.2 | 84.77 | 26.33 | 9.64 | 12.9 | 1661.1 | 1847.4 |
| 189.3 | 84.77 | 26.33 | 9.89 | 19.3 | 1661.1 | 1847.4 |
| 252.4 | 84.77 | 26.33 | 10.14 | 25.7 | 1661.1 | 1847.4 |
| 315.6 | 84.77 | 26.33 | 10.39 | 32.2 | 1661.1 | 1847.4 |
| 378.7 | 84.77 | 26.33 | 10.64 | 38.6 | 1661.1 | 1847.4 |
| 414.2 | 84.75 | 26.38 | 10.79 | 42.2 | 525.8 | 558.3 |
| 446.8 | 84.73 | 26.44 | 10.95 | 45.6 | 525.8 | 558.3 |
| 479.4 | 84.70 | 26.48 | 11.11 | 48.9 | 525.8 | 558.3 |
| 512.0 | 84.69 | 26.52 | 11.29 | 52.2 | 525.8 | 558.3 |
| 544.6 | 84.67 | 26.56 | 11.48 | 55.5 | 525.8 | 558.3 |
| 577.2 | 84.66 | 26.59 | 11.67 | 58.8 | 525.8 | 558.3 |
| 609.8 | 84.64 | 26.62 | 11.87 | 62.2 | 525.8 | 558.3 |
| 642.4 | 84.63 | 26.64 | 12.07 | 65.5 | 525.8 | 558.3 |
| 675.0 | 84.62 | 26.66 | 12.28 | 68.8 | 525.8 | 558.3 |
| 707.5 | 84.61 | 26.68 | 12.49 | 72.1 | 525.8 | 558.3 |
| 740.1 | 84.60 | 26.70 | 12.71 | 75.5 | 525.8 | 558.3 |
| 772.7 | 84.60 | 26.72 | 12.93 | 78.8 | 525.8 | 558.3 |
| 805.3 | 84.59 | 26.74 | 13.15 | 82.1 | 525.8 | 558.3 |
| 837.9 | 84.58 | 26.75 | 13.37 | 85.4 | 525.8 | 558.3 |
| 870.5 | 84.58 | 26.76 | 13.60 | 88.8 | 525.8 | 558.3 |
| 903.1 | 84.57 | 26.78 | 13.83 | 92.1 | 525.8 | 558.3 |
| 935.7 | 84.56 | 26.79 | 14.05 | 95.4 | 525.8 | 558.3 |
| 968.3 | 84.56 | 26.80 | 14.28 | 98.7 | 525.8 | 558.3 |
| 980.8 | 84.56 | 26.80 | 14.37 | 100.0 | 525.8 | 558.3 |

É Cópia do Documento Original

Tank Capacity Tables

CHAIN LOCKER No. 1 PORT

| Volume | LCG | TCG | VCG | % | I _{trans} | I _{long} |
|--------|-------|--------|------|-------|--------------------|-------------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | |
| 2.3 | 84.58 | -30.50 | 1.00 | 0.6 | 1.0 | 45.1 |
| 14.4 | 84.58 | -30.43 | 1.51 | 4.0 | 102.7 | 526.5 |
| 37.9 | 84.58 | -30.42 | 1.82 | 10.5 | 102.7 | 526.5 |
| 61.5 | 84.58 | -30.41 | 2.08 | 16.9 | 102.7 | 526.5 |
| 85.1 | 84.58 | -30.41 | 2.34 | 23.4 | 102.7 | 526.5 |
| 108.7 | 84.58 | -30.41 | 2.59 | 29.9 | 102.7 | 526.5 |
| 132.3 | 84.58 | -30.41 | 3.09 | 36.4 | 102.7 | 526.5 |
| 155.9 | 84.58 | -30.41 | 3.34 | 42.9 | 102.7 | 526.5 |
| 179.5 | 84.58 | -30.41 | 3.59 | 49.4 | 102.7 | 526.5 |
| 203.1 | 84.58 | -30.41 | 3.84 | 55.9 | 102.7 | 526.5 |
| 226.7 | 84.58 | -30.41 | 4.10 | 62.4 | 102.7 | 526.5 |
| 250.3 | 84.58 | -30.41 | 4.35 | 68.9 | 102.7 | 526.5 |
| 273.8 | 84.58 | -30.41 | 4.60 | 75.4 | 102.7 | 526.5 |
| 321.0 | 84.58 | -30.41 | 4.90 | 88.4 | 102.7 | 526.5 |
| 344.6 | 84.58 | -30.41 | 5.10 | 94.9 | 102.7 | 526.5 |
| 363.1 | 84.58 | -30.41 | 5.29 | 100.0 | 102.7 | 526.5 |

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

MA-3010.38-1320-915-NBD-909

Tank Capacity Tables

CHAIN LOCKER No. 2 PORT

| Volume | LCG | TCG | VCG | % | I _{trans} | I _{long} |
|--------|-------|--------|------|-------|--------------------|-------------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | |
| 2.3 | 28.19 | -30.50 | 1.00 | 0.6 | 1.0 | 45.1 |
| 14.4 | 28.19 | -30.43 | 1.51 | 4.0 | 102.7 | 526.5 |
| 37.9 | 28.19 | -30.42 | 1.82 | 10.5 | 102.7 | 526.5 |
| 61.5 | 28.19 | -30.41 | 2.08 | 16.9 | 102.7 | 526.5 |
| 85.1 | 28.19 | -30.41 | 2.34 | 23.4 | 102.7 | 526.5 |
| 108.7 | 28.19 | -30.41 | 2.59 | 29.9 | 102.7 | 526.5 |
| 132.3 | 28.19 | -30.41 | 3.09 | 36.4 | 102.7 | 526.5 |
| 155.9 | 28.19 | -30.41 | 3.34 | 42.9 | 102.7 | 526.5 |
| 179.5 | 28.19 | -30.41 | 3.59 | 49.4 | 102.7 | 526.5 |
| 203.1 | 28.19 | -30.41 | 3.84 | 55.9 | 102.7 | 526.5 |
| 226.7 | 28.19 | -30.41 | 4.10 | 62.4 | 102.7 | 526.5 |
| 250.3 | 28.19 | -30.41 | 4.35 | 68.9 | 102.7 | 526.5 |
| 273.8 | 28.19 | -30.41 | 4.60 | 75.4 | 102.7 | 526.5 |
| 321.0 | 28.19 | -30.41 | 4.90 | 88.4 | 102.7 | 526.5 |
| 344.6 | 28.19 | -30.41 | 5.10 | 94.9 | 102.7 | 526.5 |
| 363.1 | 28.19 | -30.41 | 5.29 | 100.0 | 102.7 | 526.5 |

É Cópia Fiel do Documento Original

Tank Capacity Tables



CHAIN LOCKER No. 3 STBD

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|-------|------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | |
| 2.3 | 28.19 | 30.50 | 1.00 | 0.6 | 1.0 | 45.1 |
| 14.4 | 28.19 | 30.43 | 1.51 | 4.0 | 102.7 | 526.5 |
| 37.9 | 28.19 | 30.42 | 1.82 | 10.5 | 102.7 | 526.5 |
| 61.5 | 28.19 | 30.41 | 2.08 | 16.9 | 102.7 | 526.5 |
| 85.1 | 28.19 | 30.41 | 2.34 | 23.4 | 102.7 | 526.5 |
| 108.7 | 28.19 | 30.41 | 2.59 | 29.9 | 102.7 | 526.5 |
| 132.3 | 28.19 | 30.41 | 3.09 | 36.4 | 102.7 | 526.5 |
| 155.9 | 28.19 | 30.41 | 3.34 | 42.9 | 102.7 | 526.5 |
| 179.5 | 28.19 | 30.41 | 3.59 | 49.4 | 102.7 | 526.5 |
| 203.1 | 28.19 | 30.41 | 3.84 | 55.9 | 102.7 | 526.5 |
| 226.7 | 28.19 | 30.41 | 4.10 | 62.4 | 102.7 | 526.5 |
| 250.3 | 28.19 | 30.41 | 4.35 | 68.9 | 102.7 | 526.5 |
| 273.8 | 28.19 | 30.41 | 4.60 | 75.4 | 102.7 | 526.5 |
| 321.0 | 28.19 | 30.41 | 4.90 | 88.4 | 102.7 | 526.5 |
| 344.6 | 28.19 | 30.41 | 5.10 | 94.9 | 102.7 | 526.5 |
| 363.1 | 28.19 | 30.41 | 5.29 | 100.0 | 102.7 | 526.5 |

É Cópia Fiel do Documento Original

Tank Capacity Tables

CHAIN LOCKER No. 4 STBD

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|-------|------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | |
| 2.3 | 84.58 | 30.50 | 1.00 | 0.6 | 1.0 | 45.1 |
| 14.4 | 84.58 | 30.43 | 1.51 | 4.0 | 102.7 | 526.5 |
| 37.9 | 84.58 | 30.42 | 1.82 | 10.5 | 102.7 | 526.5 |
| 61.5 | 84.58 | 30.41 | 2.08 | 16.9 | 102.7 | 526.5 |
| 85.1 | 84.58 | 30.41 | 2.34 | 23.4 | 102.7 | 526.5 |
| 108.7 | 84.58 | 30.41 | 2.59 | 29.9 | 102.7 | 526.5 |
| 132.3 | 84.58 | 30.41 | 3.09 | 36.4 | 102.7 | 526.5 |
| 155.9 | 84.58 | 30.41 | 3.34 | 42.9 | 102.7 | 526.5 |
| 179.5 | 84.58 | 30.41 | 3.59 | 49.4 | 102.7 | 526.5 |
| 203.1 | 84.58 | 30.41 | 3.84 | 55.9 | 102.7 | 526.5 |
| 226.7 | 84.58 | 30.41 | 4.10 | 62.4 | 102.7 | 526.5 |
| 250.3 | 84.58 | 30.41 | 4.35 | 68.9 | 102.7 | 526.5 |
| 273.8 | 84.58 | 30.41 | 4.60 | 75.4 | 102.7 | 526.5 |
| 321.0 | 84.58 | 30.41 | 4.90 | 88.4 | 102.7 | 526.5 |
| 344.6 | 84.58 | 30.41 | 5.10 | 94.9 | 102.7 | 526.5 |
| 363.1 | 84.58 | 30.41 | 5.29 | 100.0 | 102.7 | 526.5 |

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

100% GARANTIA DE FIDELIDADE
Data: 10/10/2019

Tank Capacity Tables

CHAIN LOCKER No. 5 PORT

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|--------|-------|-------|-------------|------------|
| 0.0 | | | 12.19 | 0.0 | 0.0 | |
| 2.9 | 86.47 | -31.12 | 12.44 | 5.5 | 3.3 | 2.5 |
| 5.7 | 86.47 | -31.12 | 12.69 | 10.9 | 3.3 | 2.5 |
| 8.6 | 86.47 | -31.12 | 12.94 | 16.4 | 3.3 | 2.5 |
| 11.4 | 86.47 | -31.12 | 13.19 | 21.9 | 3.3 | 2.5 |
| 14.3 | 86.47 | -31.12 | 13.44 | 27.3 | 3.3 | 2.5 |
| 17.1 | 86.47 | -31.12 | 13.69 | 32.8 | 3.3 | 2.5 |
| 20.0 | 86.47 | -31.12 | 13.94 | 38.3 | 3.3 | 2.5 |
| 22.9 | 86.47 | -31.12 | 14.19 | 43.7 | 3.3 | 2.5 |
| 25.7 | 86.47 | -31.12 | 14.44 | 49.2 | 3.3 | 2.5 |
| 28.6 | 86.47 | -31.12 | 14.69 | 54.7 | 3.3 | 2.5 |
| 31.4 | 86.47 | -31.12 | 14.94 | 60.1 | 3.3 | 2.5 |
| 34.3 | 86.47 | -31.12 | 15.19 | 65.6 | 3.3 | 2.5 |
| 37.1 | 86.47 | -31.12 | 15.44 | 71.1 | 3.3 | 2.5 |
| 40.0 | 86.47 | -31.12 | 15.69 | 76.6 | 3.3 | 2.5 |
| 42.8 | 86.47 | -31.12 | 15.94 | 82.0 | 3.3 | 2.5 |
| 45.7 | 86.47 | -31.12 | 16.19 | 87.5 | 3.3 | 2.5 |
| 48.6 | 86.47 | -31.12 | 16.44 | 93.0 | 3.3 | 2.5 |
| 51.4 | 86.47 | -31.12 | 16.69 | 98.4 | 3.3 | 2.5 |
| 52.2 | 86.47 | -31.12 | 16.76 | 100.0 | 3.3 | 2.5 |

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Tank Capacity Tables

CHAIN LOCKER No. 6 PORT

| Volume | LCG | TCG | VCG | % | l_{trans} | l_{long} |
|--------|-------|--------|-------|-------|-------------|------------|
| 0.0 | | | 12.19 | 0.0 | 0.0 | |
| 2.9 | 26.31 | -31.12 | 12.44 | 5.5 | 3.3 | 2.5 |
| 5.7 | 26.31 | -31.12 | 12.69 | 10.9 | 3.3 | 2.5 |
| 8.6 | 26.31 | -31.12 | 12.94 | 16.4 | 3.3 | 2.5 |
| 11.4 | 26.31 | -31.12 | 13.19 | 21.9 | 3.3 | 2.5 |
| 14.3 | 26.31 | -31.12 | 13.44 | 27.3 | 3.3 | 2.5 |
| 17.1 | 26.31 | -31.12 | 13.69 | 32.8 | 3.3 | 2.5 |
| 20.0 | 26.31 | -31.12 | 13.94 | 38.3 | 3.3 | 2.5 |
| 22.9 | 26.31 | -31.12 | 14.19 | 43.7 | 3.3 | 2.5 |
| 25.7 | 26.31 | -31.12 | 14.44 | 49.2 | 3.3 | 2.5 |
| 28.6 | 26.31 | -31.12 | 14.69 | 54.7 | 3.3 | 2.5 |
| 31.4 | 26.31 | -31.12 | 14.94 | 60.1 | 3.3 | 2.5 |
| 34.3 | 26.31 | -31.12 | 15.19 | 65.6 | 3.3 | 2.5 |
| 37.1 | 26.31 | -31.12 | 15.44 | 71.1 | 3.3 | 2.5 |
| 40.0 | 26.31 | -31.12 | 15.69 | 76.6 | 3.3 | 2.5 |
| 42.8 | 26.31 | -31.12 | 15.94 | 82.0 | 3.3 | 2.5 |
| 45.7 | 26.31 | -31.12 | 16.19 | 87.5 | 3.3 | 2.5 |
| 48.6 | 26.31 | -31.12 | 16.44 | 93.0 | 3.3 | 2.5 |
| 51.4 | 26.31 | -31.12 | 16.69 | 98.4 | 3.3 | 2.5 |
| 52.2 | 26.31 | -31.12 | 16.76 | 100.0 | 3.3 | 2.5 |

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DESENVOLVIDO POR: [illegible]
DATA: [illegible]

Tank Capacity Tables

CHAIN LOCKER No. 7 STBD

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|-------|-------|-------|-------------|------------|
| 0.0 | | | 12.19 | 0.0 | 0.0 | |
| 2.9 | 26.31 | 31.12 | 12.44 | 5.5 | 3.3 | 2.5 |
| 5.7 | 26.31 | 31.12 | 12.69 | 10.9 | 3.3 | 2.5 |
| 8.6 | 26.31 | 31.12 | 12.94 | 16.4 | 3.3 | 2.5 |
| 11.4 | 26.31 | 31.12 | 13.19 | 21.9 | 3.3 | 2.5 |
| 14.3 | 26.31 | 31.12 | 13.44 | 27.3 | 3.3 | 2.5 |
| 17.1 | 26.31 | 31.12 | 13.69 | 32.8 | 3.3 | 2.5 |
| 20.0 | 26.31 | 31.12 | 13.94 | 38.3 | 3.3 | 2.5 |
| 22.9 | 26.31 | 31.12 | 14.19 | 43.7 | 3.3 | 2.5 |
| 25.7 | 26.31 | 31.12 | 14.44 | 49.2 | 3.3 | 2.5 |
| 28.6 | 26.31 | 31.12 | 14.69 | 54.7 | 3.3 | 2.5 |
| 31.4 | 26.31 | 31.12 | 14.94 | 60.1 | 3.3 | 2.5 |
| 34.3 | 26.31 | 31.12 | 15.19 | 65.6 | 3.3 | 2.5 |
| 37.1 | 26.31 | 31.12 | 15.44 | 71.1 | 3.3 | 2.5 |
| 40.0 | 26.31 | 31.12 | 15.69 | 76.6 | 3.3 | 2.5 |
| 42.8 | 26.31 | 31.12 | 15.94 | 82.0 | 3.3 | 2.5 |
| 45.7 | 26.31 | 31.12 | 16.19 | 87.5 | 3.3 | 2.5 |
| 48.6 | 26.31 | 31.12 | 16.44 | 93.0 | 3.3 | 2.5 |
| 51.4 | 26.31 | 31.12 | 16.69 | 98.4 | 3.3 | 2.5 |
| 52.2 | 26.31 | 31.12 | 16.76 | 100.0 | 3.3 | 2.5 |

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Tank Capacity Tables

CHAIN LOCKER No. 8 STBD

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|-------|-------|-------|-------------|------------|
| 0.0 | | | 12.19 | 0.0 | 0.0 | |
| 2.9 | 86.47 | 31.12 | 12.44 | 5.5 | 3.3 | 2.5 |
| 5.7 | 86.47 | 31.12 | 12.69 | 10.9 | 3.3 | 2.5 |
| 8.6 | 86.47 | 31.12 | 12.94 | 16.4 | 3.3 | 2.5 |
| 11.4 | 86.47 | 31.12 | 13.19 | 21.9 | 3.3 | 2.5 |
| 14.3 | 86.47 | 31.12 | 13.44 | 27.3 | 3.3 | 2.5 |
| 17.1 | 86.47 | 31.12 | 13.69 | 32.8 | 3.3 | 2.5 |
| 20.0 | 86.47 | 31.12 | 13.94 | 38.3 | 3.3 | 2.5 |
| 22.9 | 86.47 | 31.12 | 14.19 | 43.7 | 3.3 | 2.5 |
| 25.7 | 86.47 | 31.12 | 14.44 | 49.2 | 3.3 | 2.5 |
| 28.6 | 86.47 | 31.12 | 14.69 | 54.7 | 3.3 | 2.5 |
| 31.4 | 86.47 | 31.12 | 14.94 | 60.1 | 3.3 | 2.5 |
| 34.3 | 86.47 | 31.12 | 15.19 | 65.6 | 3.3 | 2.5 |
| 37.1 | 86.47 | 31.12 | 15.44 | 71.1 | 3.3 | 2.5 |
| 40.0 | 86.47 | 31.12 | 15.69 | 76.6 | 3.3 | 2.5 |
| 42.8 | 86.47 | 31.12 | 15.94 | 82.0 | 3.3 | 2.5 |
| 45.7 | 86.47 | 31.12 | 16.19 | 87.5 | 3.3 | 2.5 |
| 48.6 | 86.47 | 31.12 | 16.44 | 93.0 | 3.3 | 2.5 |
| 51.4 | 86.47 | 31.12 | 16.69 | 98.4 | 3.3 | 2.5 |
| 52.2 | 86.47 | 31.12 | 16.76 | 100.0 | 3.3 | 2.5 |

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Tank Capacity Tables

1055 JK

FUEL OIL TANK N 10 PORT

| Volume | LCG | TCG | VCG | % | I _{trans} | I _{long} |
|--------|-------|--------|------|-------|--------------------|-------------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | 0.0 |
| 30.9 | 50.92 | -24.31 | 0.26 | 5.1 | 224.8 | 611.1 |
| 64.6 | 50.92 | -24.17 | 0.52 | 10.6 | 258.8 | 642.2 |
| 99.3 | 50.93 | -24.09 | 0.77 | 16.2 | 270.8 | 652.5 |
| 134.2 | 50.93 | -24.05 | 1.03 | 22.0 | 271.2 | 652.8 |
| 163.2 | 50.97 | -23.93 | 1.24 | 26.7 | 148.6 | 533.5 |
| 191.8 | 51.00 | -23.84 | 1.47 | 31.4 | 148.6 | 533.5 |
| 220.3 | 51.02 | -23.77 | 1.70 | 36.0 | 148.6 | 533.5 |
| 248.9 | 51.04 | -23.72 | 1.93 | 40.7 | 148.6 | 533.5 |
| 283.8 | 51.04 | -23.75 | 2.22 | 46.4 | 286.8 | 693.9 |
| 319.6 | 51.05 | -23.77 | 2.50 | 52.3 | 286.8 | 693.9 |
| 355.5 | 51.05 | -23.80 | 2.78 | 58.2 | 286.8 | 693.9 |
| 391.3 | 51.05 | -23.82 | 3.05 | 64.0 | 286.8 | 693.9 |
| 427.2 | 51.05 | -23.83 | 3.32 | 69.9 | 286.8 | 693.9 |
| 463.0 | 51.05 | -23.85 | 3.59 | 75.7 | 286.8 | 693.9 |
| 498.9 | 51.05 | -23.86 | 3.85 | 81.6 | 286.8 | 693.9 |
| 534.6 | 51.05 | -23.87 | 4.11 | 87.5 | 280.8 | 689.0 |
| 569.7 | 51.05 | -23.88 | 4.37 | 93.2 | 250.8 | 663.5 |
| 602.7 | 51.05 | -23.90 | 4.61 | 98.6 | 187.0 | 601.7 |
| 611.3 | 51.05 | -23.91 | 4.67 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

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FUEL OIL TANK N10 STBD

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|-------|------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | |
| 30.9 | 50.92 | 24.31 | 0.26 | 5.1 | 224.8 | 611.1 |
| 64.6 | 50.92 | 24.17 | 0.52 | 10.6 | 258.8 | 642.2 |
| 99.3 | 50.93 | 24.09 | 0.77 | 16.2 | 270.8 | 652.5 |
| 134.2 | 50.93 | 24.05 | 1.03 | 22.0 | 271.2 | 652.8 |
| 163.2 | 50.97 | 23.93 | 1.24 | 26.7 | 148.6 | 533.5 |
| 191.8 | 51.00 | 23.84 | 1.47 | 31.4 | 148.6 | 533.5 |
| 220.3 | 51.02 | 23.77 | 1.70 | 36.0 | 148.6 | 533.5 |
| 248.9 | 51.04 | 23.72 | 1.93 | 40.7 | 148.6 | 533.5 |
| 283.8 | 51.04 | 23.75 | 2.22 | 46.4 | 286.8 | 693.9 |
| 319.6 | 51.05 | 23.77 | 2.50 | 52.3 | 286.8 | 693.9 |
| 355.5 | 51.05 | 23.80 | 2.78 | 58.2 | 286.8 | 693.9 |
| 391.3 | 51.05 | 23.82 | 3.05 | 64.0 | 286.8 | 693.9 |
| 427.2 | 51.05 | 23.83 | 3.32 | 69.9 | 286.8 | 693.9 |
| 463.0 | 51.05 | 23.85 | 3.59 | 75.7 | 286.8 | 693.9 |
| 498.9 | 51.05 | 23.86 | 3.85 | 81.6 | 286.8 | 693.9 |
| 534.6 | 51.05 | 23.87 | 4.11 | 87.5 | 280.8 | 689.0 |
| 569.7 | 51.05 | 23.88 | 4.37 | 93.2 | 250.8 | 663.5 |
| 602.7 | 51.05 | 23.90 | 4.61 | 98.6 | 187.0 | 601.7 |
| 611.3 | 51.05 | 23.91 | 4.67 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

FUEL OIL TANK N 12 PORT

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|--------|--------|------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | 0.0 |
| 31.7 | -61.73 | -24.38 | 0.26 | 5.2 | 238.2 | 652.2 |
| 66.1 | -61.73 | -24.25 | 0.51 | 10.8 | 273.8 | 683.3 |
| 101.6 | -61.73 | -24.17 | 0.77 | 16.5 | 286.4 | 693.5 |
| 137.2 | -61.73 | -24.13 | 1.03 | 22.3 | 286.8 | 693.9 |
| 166.7 | -61.73 | -24.00 | 1.24 | 27.1 | 157.2 | 567.9 |
| 195.8 | -61.73 | -23.91 | 1.47 | 31.9 | 157.2 | 567.9 |
| 224.9 | -61.73 | -23.84 | 1.70 | 36.6 | 157.2 | 567.9 |
| 254.0 | -61.73 | -23.78 | 1.93 | 41.3 | 157.2 | 567.9 |
| 288.8 | -61.73 | -23.80 | 2.21 | 47.0 | 286.8 | 693.9 |
| 324.5 | -61.73 | -23.82 | 2.49 | 52.8 | 286.8 | 693.9 |
| 360.2 | -61.73 | -23.84 | 2.76 | 58.6 | 286.8 | 693.9 |
| 395.8 | -61.73 | -23.86 | 3.03 | 64.4 | 286.8 | 693.9 |
| 431.5 | -61.73 | -23.87 | 3.30 | 70.2 | 286.8 | 693.9 |
| 467.2 | -61.73 | -23.88 | 3.56 | 76.0 | 286.8 | 693.9 |
| 502.8 | -61.73 | -23.89 | 3.82 | 81.8 | 286.8 | 693.9 |
| 538.4 | -61.73 | -23.90 | 4.08 | 87.6 | 280.8 | 689.0 |
| 573.3 | -61.73 | -23.91 | 4.34 | 93.3 | 250.8 | 663.5 |
| 606.1 | -61.73 | -23.93 | 4.58 | 98.6 | 187.0 | 601.7 |
| 614.7 | -61.73 | -23.94 | 4.64 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

FUEL OIL TANK N 12 STBD

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|--------|-------|------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | |
| 31.7 | -61.73 | 24.38 | 0.26 | 5.2 | 238.2 | 652.2 |
| 66.1 | -61.73 | 24.25 | 0.51 | 10.8 | 273.8 | 683.3 |
| 101.6 | -61.73 | 24.17 | 0.77 | 16.5 | 286.4 | 693.5 |
| 137.2 | -61.73 | 24.13 | 1.03 | 22.3 | 286.8 | 693.9 |
| 166.7 | -61.73 | 24.00 | 1.24 | 27.1 | 157.2 | 567.9 |
| 195.8 | -61.73 | 23.91 | 1.47 | 31.9 | 157.2 | 567.9 |
| 224.9 | -61.73 | 23.84 | 1.70 | 36.6 | 157.2 | 567.9 |
| 254.0 | -61.73 | 23.78 | 1.93 | 41.3 | 157.2 | 567.9 |
| 288.8 | -61.73 | 23.80 | 2.21 | 47.0 | 286.8 | 693.9 |
| 324.5 | -61.73 | 23.82 | 2.49 | 52.8 | 286.8 | 693.9 |
| 360.2 | -61.73 | 23.84 | 2.76 | 58.6 | 286.8 | 693.9 |
| 395.8 | -61.73 | 23.86 | 3.03 | 64.4 | 286.8 | 693.9 |
| 431.5 | -61.73 | 23.87 | 3.30 | 70.2 | 286.8 | 693.9 |
| 467.2 | -61.73 | 23.88 | 3.56 | 76.0 | 286.8 | 693.9 |
| 502.8 | -61.73 | 23.89 | 3.82 | 81.8 | 286.8 | 693.9 |
| 538.4 | -61.73 | 23.90 | 4.08 | 87.6 | 280.8 | 689.0 |
| 573.3 | -61.73 | 23.91 | 4.34 | 93.3 | 250.8 | 663.5 |
| 606.1 | -61.73 | 23.93 | 4.58 | 98.6 | 187.0 | 601.7 |
| 614.7 | -61.73 | 23.94 | 4.64 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

1053

FUEL OIL OVERFLOW TANK PORT

| Volume | LCG | TCG | VCG | % | I _{trans} | I _{long} |
|--------|-------|--------|-------|-------|--------------------|-------------------|
| 0.0 | | | 35.05 | 0.0 | 0.0 | 0.0 |
| 1.1 | 78.94 | -17.79 | 35.10 | 6.6 | 22.1 | 6.7 |
| 2.2 | 78.94 | -17.79 | 35.15 | 13.1 | 22.1 | 6.7 |
| 3.4 | 78.94 | -17.79 | 35.20 | 19.7 | 22.1 | 6.7 |
| 4.8 | 78.94 | -17.79 | 35.25 | 28.4 | 22.1 | 6.7 |
| 5.6 | 78.94 | -17.79 | 35.30 | 32.8 | 22.1 | 6.7 |
| 6.7 | 78.94 | -17.79 | 35.35 | 39.4 | 22.1 | 6.7 |
| 7.8 | 78.94 | -17.79 | 35.40 | 45.9 | 22.1 | 6.7 |
| 9.0 | 78.94 | -17.79 | 35.45 | 52.5 | 22.1 | 6.7 |
| 10.1 | 78.94 | -17.79 | 35.50 | 59.1 | 22.1 | 6.7 |
| 11.2 | 78.94 | -17.79 | 35.55 | 65.6 | 22.1 | 6.7 |
| 12.3 | 78.94 | -17.79 | 35.60 | 72.2 | 22.1 | 6.7 |
| 13.5 | 78.94 | -17.79 | 35.65 | 78.7 | 22.1 | 6.7 |
| 14.6 | 78.94 | -17.79 | 35.70 | 85.3 | 22.1 | 6.7 |
| 15.7 | 78.94 | -17.79 | 35.75 | 91.9 | 22.1 | 6.7 |
| 16.8 | 78.94 | -17.79 | 35.80 | 98.4 | 22.1 | 6.7 |
| 17.1 | 78.94 | -17.79 | 35.81 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

FUEL OIL OVERFLOW TANK STBD

| Volume | LCG | TCG | VCG | % | ltrans | llong |
|--------|-------|-------|-------|-------|--------|-------|
| 0.0 | | | 35.05 | 0.0 | 0.0 | |
| 1.0 | 78.87 | 22.86 | 35.10 | 6.6 | 18.2 | 4.6 |
| 2.1 | 78.87 | 22.86 | 35.15 | 13.1 | 18.2 | 4.6 |
| 3.1 | 78.87 | 22.86 | 35.20 | 19.7 | 18.2 | 4.6 |
| 4.1 | 78.87 | 22.86 | 35.25 | 26.2 | 18.2 | 4.6 |
| 5.2 | 78.87 | 22.86 | 35.30 | 32.8 | 18.2 | 4.6 |
| 6.2 | 78.87 | 22.86 | 35.35 | 39.4 | 18.2 | 4.6 |
| 7.2 | 78.87 | 22.86 | 35.40 | 45.9 | 18.2 | 4.6 |
| 8.3 | 78.87 | 22.86 | 35.45 | 52.5 | 18.2 | 4.6 |
| 9.3 | 78.87 | 22.86 | 35.50 | 59.1 | 18.2 | 4.6 |
| 10.3 | 78.87 | 22.86 | 35.55 | 65.6 | 18.2 | 4.6 |
| 11.4 | 78.87 | 22.86 | 35.60 | 72.2 | 18.2 | 4.6 |
| 12.4 | 78.87 | 22.86 | 35.65 | 78.7 | 18.2 | 4.6 |
| 13.5 | 78.87 | 22.86 | 35.70 | 85.3 | 18.2 | 4.6 |
| 14.5 | 78.87 | 22.86 | 35.75 | 91.9 | 18.2 | 4.6 |
| 15.5 | 78.87 | 22.86 | 35.80 | 98.4 | 18.2 | 4.6 |
| 15.8 | 78.87 | 22.86 | 35.81 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

DIESEL OIL SLUDGE TANK N1 PORT

| Volume | LCG | TCG | VCG | % | l_{trans} | l_{long} |
|--------|-------|--------|-------|-------|-------------|------------|
| 0.0 | | 0.00 | 35.05 | 0.0 | 0.0 | 0.0 |
| 0.3 | 67.61 | -15.62 | 35.10 | 6.6 | 1.4 | 0.3 |
| 0.5 | 67.61 | -15.62 | 35.15 | 13.1 | 1.4 | 0.3 |
| 0.8 | 67.61 | -15.62 | 35.20 | 19.7 | 1.4 | 0.3 |
| 1.1 | 67.61 | -15.62 | 35.25 | 26.2 | 1.4 | 0.3 |
| 1.4 | 67.61 | -15.62 | 35.30 | 32.8 | 1.4 | 0.3 |
| 1.6 | 67.61 | -15.62 | 35.35 | 39.4 | 1.4 | 0.3 |
| 1.9 | 67.61 | -15.62 | 35.40 | 45.9 | 1.4 | 0.3 |
| 2.2 | 67.61 | -15.62 | 35.45 | 52.5 | 1.4 | 0.3 |
| 2.4 | 67.61 | -15.62 | 35.50 | 59.0 | 1.4 | 0.3 |
| 2.7 | 67.61 | -15.62 | 35.55 | 65.6 | 1.4 | 0.3 |
| 3.0 | 67.61 | -15.62 | 35.60 | 72.2 | 1.4 | 0.3 |
| 3.2 | 67.61 | -15.62 | 35.65 | 78.7 | 1.4 | 0.3 |
| 3.5 | 67.61 | -15.62 | 35.70 | 85.3 | 1.4 | 0.3 |
| 3.8 | 67.61 | -15.62 | 35.75 | 91.8 | 1.4 | 0.3 |
| 4.1 | 67.61 | -15.62 | 35.80 | 98.4 | 1.4 | 0.3 |
| 4.1 | 67.61 | -15.62 | 35.81 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

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DIESEL OIL SLUDGE TANK N1 PORT

| Volume | LCG | TCG | VCG | % | l_{trans} | l_{long} |
|--------|-------|-------|-------|-------|-------------|------------|
| 0.0 | 0.00 | 0.00 | 35.05 | 0.0 | 0.0 | 0.0 |
| 0.2 | 78.58 | 10.10 | 35.10 | 6.6 | 0.2 | 0.5 |
| 0.4 | 78.58 | 10.10 | 35.15 | 13.1 | 0.2 | 0.5 |
| 0.6 | 78.58 | 10.10 | 35.20 | 19.7 | 0.2 | 0.5 |
| 0.8 | 78.58 | 10.10 | 35.25 | 26.2 | 0.2 | 0.5 |
| 1.0 | 78.58 | 10.10 | 35.30 | 32.8 | 0.2 | 0.5 |
| 1.2 | 78.58 | 10.10 | 35.35 | 39.4 | 0.2 | 0.5 |
| 1.4 | 78.58 | 10.10 | 35.40 | 45.9 | 0.2 | 0.5 |
| 1.6 | 78.58 | 10.10 | 35.45 | 52.5 | 0.2 | 0.5 |
| 1.7 | 78.58 | 10.10 | 35.50 | 59.0 | 0.2 | 0.5 |
| 1.9 | 78.58 | 10.10 | 35.55 | 65.6 | 0.2 | 0.5 |
| 2.1 | 78.58 | 10.10 | 35.60 | 72.2 | 0.2 | 0.5 |
| 2.3 | 78.58 | 10.10 | 35.65 | 78.7 | 0.2 | 0.5 |
| 2.5 | 78.58 | 10.10 | 35.70 | 85.3 | 0.2 | 0.5 |
| 2.7 | 78.58 | 10.10 | 35.75 | 91.8 | 0.2 | 0.5 |
| 2.9 | 78.58 | 10.10 | 35.80 | 98.4 | 0.2 | 0.5 |
| 3.0 | 78.58 | 10.10 | 35.81 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

DIESEL OIL DAY TANK N2 PORT

| Volume | LCG | TCG | VCG | % | l_{trans} | l_{long} |
|--------|-------|--------|-------|-------|-------------|------------|
| 0.0 | | | 36.58 | 0.0 | 0.0 | 0.0 |
| 4.5 | 74.60 | -17.45 | 36.68 | 3.6 | 26.3 | 75.9 |
| 9.1 | 74.60 | -17.45 | 36.78 | 7.1 | 26.3 | 75.9 |
| 13.6 | 74.60 | -17.45 | 36.88 | 10.7 | 26.3 | 75.9 |
| 18.2 | 74.60 | -17.45 | 36.98 | 14.3 | 26.3 | 75.9 |
| 22.7 | 74.60 | -17.45 | 37.08 | 17.9 | 26.3 | 75.9 |
| 27.3 | 74.60 | -17.45 | 37.18 | 21.4 | 26.3 | 75.9 |
| 31.8 | 74.60 | -17.45 | 37.28 | 25.0 | 26.3 | 75.9 |
| 36.4 | 74.60 | -17.45 | 37.38 | 28.6 | 26.3 | 75.9 |
| 40.9 | 74.60 | -17.45 | 37.48 | 32.2 | 26.3 | 75.9 |
| 45.4 | 74.60 | -17.45 | 37.58 | 35.7 | 26.3 | 75.9 |
| 50.0 | 74.60 | -17.45 | 37.68 | 39.3 | 26.3 | 75.9 |
| 54.5 | 74.60 | -17.45 | 37.78 | 42.9 | 26.3 | 75.9 |
| 59.1 | 74.60 | -17.45 | 37.88 | 46.4 | 26.3 | 75.9 |
| 63.6 | 74.60 | -17.45 | 37.98 | 50.0 | 26.3 | 75.9 |
| 68.2 | 74.60 | -17.45 | 38.08 | 53.6 | 26.3 | 75.9 |
| 72.7 | 74.60 | -17.45 | 38.18 | 57.2 | 26.3 | 75.9 |
| 77.3 | 74.60 | -17.45 | 38.28 | 60.7 | 26.3 | 75.9 |
| 81.8 | 74.60 | -17.45 | 38.38 | 64.3 | 26.3 | 75.9 |
| 86.3 | 74.60 | -17.45 | 38.48 | 67.9 | 26.3 | 75.9 |
| 90.9 | 74.60 | -17.45 | 38.58 | 71.5 | 26.3 | 75.9 |
| 95.4 | 74.60 | -17.45 | 38.68 | 75.0 | 26.3 | 75.9 |
| 100.0 | 74.60 | -17.45 | 38.78 | 78.6 | 26.3 | 75.9 |
| 104.5 | 74.60 | -17.45 | 38.88 | 82.2 | 26.3 | 75.9 |
| 109.1 | 74.60 | -17.45 | 38.98 | 85.7 | 26.3 | 75.9 |
| 113.6 | 74.60 | -17.45 | 39.08 | 89.3 | 26.3 | 75.9 |
| 118.2 | 74.60 | -17.45 | 39.18 | 92.9 | 26.3 | 75.9 |
| 122.7 | 74.60 | -17.45 | 39.28 | 96.5 | 26.3 | 75.9 |
| 127.1 | 74.60 | -17.45 | 39.37 | 99.9 | 26.3 | 75.9 |
| 127.2 | 74.60 | -17.45 | 39.38 | 100.0 | 26.3 | 75.9 |

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Tank Capacity Tables

DIESEL OIL DAY TANKS N3 STBD

| Volume | LCG | TCG | VCG | % | I _{trans} | I _{long} |
|--------|-------|-------|-------|-------|--------------------|-------------------|
| 0.0 | 0.00 | 0.00 | 36.58 | 0.0 | 0.0 | 0.0 |
| 5.5 | 82.01 | 15.62 | 36.68 | 6.6 | 231.4 | 811.2 |
| 11.1 | 82.01 | 15.62 | 36.78 | 13.1 | 231.4 | 811.3 |
| 16.6 | 82.01 | 15.62 | 36.88 | 19.7 | 231.4 | 811.3 |
| 22.2 | 82.01 | 15.62 | 36.98 | 26.2 | 231.4 | 811.3 |
| 27.7 | 82.01 | 15.62 | 37.08 | 32.8 | 231.4 | 811.3 |
| 33.3 | 82.01 | 15.62 | 37.18 | 39.4 | 231.4 | 811.3 |
| 38.8 | 82.01 | 15.62 | 37.28 | 45.9 | 231.4 | 811.3 |
| 44.4 | 82.01 | 15.62 | 37.38 | 52.5 | 231.4 | 718.7 |
| 49.9 | 82.01 | 15.62 | 37.48 | 59.1 | 231.4 | 718.7 |
| 55.5 | 82.01 | 15.62 | 37.58 | 65.6 | 231.4 | 718.7 |
| 61.0 | 82.01 | 15.62 | 37.68 | 72.2 | 231.4 | 718.7 |
| 66.6 | 82.01 | 15.62 | 37.78 | 78.7 | 231.4 | 718.7 |
| 72.1 | 82.01 | 15.62 | 37.88 | 85.3 | 231.4 | 718.7 |
| 77.7 | 82.01 | 15.62 | 37.98 | 91.9 | 231.4 | 718.7 |
| 83.2 | 82.01 | 15.62 | 38.08 | 98.4 | 231.4 | 718.7 |
| 84.5 | 82.01 | 15.62 | 38.10 | 100.0 | 0.0 | 718.7 |

CÓPIA DEL DOCUMENTO ORIGINAL
CONTENIDO EN EL SISTEMA
10/13

Tank Capacity Tables

Stability Book

DIESEL OIL SETTLING TANK N4 STBD

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|-------|-------|-------|-------------|------------|
| 0.0 | 0.00 | 0.00 | 36.58 | 0.0 | 0.0 | 0.0 |
| 5.5 | 79.15 | 15.62 | 36.68 | 6.6 | 231.4 | 19.3 |
| 11.1 | 79.15 | 15.62 | 36.78 | 13.1 | 231.4 | 19.3 |
| 16.6 | 79.15 | 15.62 | 36.88 | 19.7 | 231.4 | 19.3 |
| 22.2 | 79.15 | 15.62 | 36.98 | 26.2 | 231.4 | 19.3 |
| 27.7 | 79.15 | 15.62 | 37.08 | 32.8 | 231.4 | 19.3 |
| 33.3 | 79.15 | 15.62 | 37.18 | 39.4 | 231.4 | 19.3 |
| 38.9 | 79.15 | 15.62 | 37.28 | 46.1 | 231.4 | 19.3 |
| 44.4 | 79.15 | 15.62 | 37.38 | 52.5 | 231.4 | 19.3 |
| 49.9 | 79.15 | 15.62 | 37.48 | 59.1 | 231.4 | 19.3 |
| 55.7 | 79.15 | 15.62 | 37.58 | 65.9 | 231.4 | 19.3 |
| 61.0 | 79.15 | 15.62 | 37.68 | 72.2 | 231.4 | 19.3 |
| 66.6 | 79.15 | 15.62 | 37.78 | 78.7 | 231.4 | 19.3 |
| 72.1 | 79.15 | 15.62 | 37.88 | 85.3 | 231.4 | 19.3 |
| 77.7 | 79.15 | 15.62 | 37.98 | 91.9 | 231.4 | 19.3 |
| 83.2 | 79.15 | 15.62 | 38.08 | 98.4 | 231.4 | 19.3 |
| 84.5 | 79.15 | 15.62 | 38.10 | 100.0 | 0.0 | 0.0 |

Tank Capacity Tables

Stability Book

DIESEL OIL SETTLING TANK N1 PORT

| Volume | LCG | TCG | VCG | % | ltrans | llong |
|--------|-------|--------|-------|-------|--------|-------|
| 0.0 | | | 36.58 | 0.0 | 0.0 | |
| 4.3 | 74.52 | -13.91 | 36.68 | 3.5 | 21.5 | 74.9 |
| 8.6 | 74.52 | -13.91 | 36.78 | 7.1 | 21.5 | 74.9 |
| 12.9 | 74.52 | -13.91 | 36.88 | 10.6 | 21.5 | 74.9 |
| 17.2 | 74.52 | -13.91 | 36.98 | 14.2 | 21.5 | 74.9 |
| 21.5 | 74.52 | -13.91 | 37.08 | 17.7 | 21.5 | 74.9 |
| 25.8 | 74.52 | -13.91 | 37.18 | 21.3 | 21.5 | 74.9 |
| 30.1 | 74.52 | -13.91 | 37.28 | 24.8 | 21.5 | 74.9 |
| 34.4 | 74.52 | -13.91 | 37.38 | 28.4 | 21.5 | 74.9 |
| 38.7 | 74.52 | -13.91 | 37.48 | 31.9 | 21.5 | 74.9 |
| 43.0 | 74.52 | -13.91 | 37.58 | 35.5 | 21.5 | 74.9 |
| 47.3 | 74.52 | -13.91 | 37.68 | 39.0 | 21.5 | 74.9 |
| 51.6 | 74.52 | -13.91 | 37.78 | 42.6 | 21.5 | 74.9 |
| 55.9 | 74.52 | -13.91 | 37.88 | 46.1 | 21.5 | 74.9 |
| 60.2 | 74.52 | -13.91 | 37.98 | 49.7 | 21.5 | 74.9 |
| 64.5 | 74.52 | -13.91 | 38.08 | 53.2 | 21.5 | 74.9 |
| 68.8 | 74.52 | -13.91 | 38.18 | 56.8 | 21.5 | 74.9 |
| 73.1 | 74.52 | -13.91 | 38.28 | 60.3 | 21.5 | 74.9 |
| 77.4 | 74.52 | -13.91 | 38.38 | 63.9 | 21.5 | 74.9 |
| 81.7 | 74.52 | -13.91 | 38.48 | 67.4 | 21.5 | 74.9 |
| 86.0 | 74.52 | -13.91 | 38.58 | 71.0 | 21.5 | 74.9 |
| 90.3 | 74.52 | -13.91 | 38.68 | 74.5 | 21.5 | 74.9 |
| 94.6 | 74.52 | -13.91 | 38.78 | 78.1 | 21.5 | 74.9 |
| 98.9 | 74.52 | -13.91 | 38.88 | 81.6 | 21.5 | 74.9 |
| 103.2 | 74.52 | -13.91 | 38.98 | 85.2 | 21.5 | 74.9 |
| 107.5 | 74.52 | -13.91 | 39.08 | 88.7 | 21.5 | 74.9 |
| 111.8 | 74.52 | -13.91 | 39.18 | 92.3 | 21.5 | 74.9 |
| 116.1 | 74.52 | -13.91 | 39.28 | 95.8 | 21.5 | 74.9 |
| 120.4 | 74.52 | -13.91 | 39.38 | 99.4 | 21.5 | 74.9 |
| 121.2 | 74.52 | -13.91 | 39.39 | 100.0 | 21.5 | 74.9 |

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Tank Capacity Tables

Stability Book

DIESEL OIL SERVICE TANK

| Volume | LCG | TCG | VCG | % | l _{trans} | l _{long} |
|--------|-------|--------|-------|-------|--------------------|-------------------|
| 0.0 | 0.00 | 0.00 | 45.77 | 0.0 | 0.0 | 0.0 |
| 1.0 | 48.01 | -21.15 | 45.87 | 8.1 | 0.6 | 9.1 |
| 2.1 | 48.01 | -21.15 | 45.97 | 16.1 | 0.6 | 9.1 |
| 3.1 | 48.01 | -21.15 | 46.07 | 24.2 | 0.6 | 9.1 |
| 4.1 | 48.01 | -21.15 | 46.17 | 32.2 | 0.6 | 9.1 |
| 5.2 | 48.01 | -21.15 | 46.27 | 40.3 | 0.6 | 9.1 |
| 6.2 | 48.01 | -21.15 | 46.37 | 48.3 | 0.6 | 9.1 |
| 7.2 | 48.01 | -21.15 | 46.47 | 56.4 | 0.6 | 9.1 |
| 8.3 | 48.01 | -21.15 | 46.57 | 64.4 | 0.6 | 9.1 |
| 9.3 | 48.01 | -21.15 | 46.67 | 72.5 | 0.6 | 9.1 |
| 10.3 | 48.01 | -21.15 | 46.77 | 80.5 | 0.6 | 9.1 |
| 11.4 | 48.01 | -21.15 | 46.87 | 88.6 | 0.6 | 9.1 |
| 12.4 | 48.01 | -21.15 | 46.97 | 96.6 | 0.6 | 9.1 |
| 12.9 | 48.01 | -21.15 | 47.01 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

DRILL WATER TANKS N8 PORT

| Volume | LCG | TCG | VCG | % | I _{trans} | I _{long} |
|--------|-------|--------|------|-------|--------------------|-------------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | 0.0 |
| 31.8 | 40.39 | -24.38 | 0.26 | 11.5 | 238.2 | 652.3 |
| 66.4 | 40.39 | -24.25 | 0.51 | 24.0 | 273.8 | 683.2 |
| 102.1 | 40.39 | -24.17 | 0.77 | 36.9 | 286.4 | 693.5 |
| 110.1 | 40.39 | -24.00 | 0.84 | 39.8 | 1.8 | 128.4 |
| 116.8 | 40.39 | -23.84 | 0.92 | 42.2 | 1.8 | 128.4 |
| 123.4 | 40.39 | -23.70 | 1.02 | 44.6 | 1.8 | 128.4 |
| 130.0 | 40.39 | -23.57 | 1.13 | 47.0 | 1.8 | 128.4 |
| 136.7 | 40.39 | -23.45 | 1.26 | 49.4 | 1.8 | 128.4 |
| 143.3 | 40.39 | -23.35 | 1.40 | 51.8 | 1.8 | 128.4 |
| 149.9 | 40.39 | -23.26 | 1.55 | 54.2 | 1.8 | 128.4 |
| 156.6 | 40.39 | -23.17 | 1.70 | 56.6 | 1.8 | 128.4 |
| 163.2 | 40.39 | -23.09 | 1.87 | 59.0 | 1.8 | 128.4 |
| 169.9 | 40.39 | -23.02 | 2.04 | 61.4 | 1.8 | 128.4 |
| 176.5 | 40.39 | -22.95 | 2.22 | 63.8 | 1.8 | 128.4 |
| 183.1 | 40.39 | -22.89 | 2.40 | 66.2 | 1.8 | 128.4 |
| 208.5 | 40.39 | -23.01 | 3.05 | 75.4 | 274.4 | 628.1 |
| 239.2 | 40.39 | -23.15 | 3.72 | 86.5 | 254.5 | 612.3 |
| 268.6 | 40.39 | -23.27 | 4.27 | 97.2 | 208.2 | 570.6 |
| 276.5 | 40.39 | -23.31 | 4.41 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

DRILL WATER TANKS N8 STBD

| Volume | LCG | TCG | VCG | % | I _{trans} | I _{long} |
|--------|-------|-------|------|-------|--------------------|-------------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | |
| 31.8 | 40.39 | 24.38 | 0.26 | 11.5 | 238.2 | 652.3 |
| 66.4 | 40.39 | 24.25 | 0.51 | 24.0 | 273.8 | 683.2 |
| 102.1 | 40.39 | 24.17 | 0.77 | 36.9 | 286.4 | 693.5 |
| 110.1 | 40.39 | 24.00 | 0.84 | 39.8 | 1.8 | 128.4 |
| 116.8 | 40.39 | 23.84 | 0.92 | 42.2 | 1.8 | 128.4 |
| 123.4 | 40.39 | 23.70 | 1.02 | 44.6 | 1.8 | 128.4 |
| 130.0 | 40.39 | 23.57 | 1.13 | 47.0 | 1.8 | 128.4 |
| 136.7 | 40.39 | 23.45 | 1.26 | 49.4 | 1.8 | 128.4 |
| 143.3 | 40.39 | 23.35 | 1.40 | 51.8 | 1.8 | 128.4 |
| 149.9 | 40.39 | 23.26 | 1.55 | 54.2 | 1.8 | 128.4 |
| 156.6 | 40.39 | 23.17 | 1.70 | 56.6 | 1.8 | 128.4 |
| 163.2 | 40.39 | 23.09 | 1.87 | 59.0 | 1.8 | 128.4 |
| 169.9 | 40.39 | 23.02 | 2.04 | 61.4 | 1.8 | 128.4 |
| 176.5 | 40.39 | 22.95 | 2.22 | 63.8 | 1.8 | 128.4 |
| 183.1 | 40.39 | 22.89 | 2.40 | 66.2 | 1.8 | 128.4 |
| 208.5 | 40.39 | 23.01 | 3.05 | 75.4 | 274.4 | 628.1 |
| 239.2 | 40.39 | 23.15 | 3.72 | 86.5 | 254.5 | 612.3 |
| 268.6 | 40.39 | 23.27 | 4.27 | 97.2 | 208.2 | 570.6 |
| 276.5 | 40.39 | 23.31 | 4.41 | 100.0 | 0.0 | 0.0 |

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MA-3010.38-1320-915-NBD-909

DRILL WATER TANKS N9 PORT

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|--------|------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | 0.0 |
| 31.5 | 40.44 | -30.45 | 0.26 | 12.7 | 227.6 | 623.8 |
| 65.3 | 40.44 | -30.45 | 0.51 | 26.3 | 259.3 | 644.5 |
| 100.0 | 40.44 | -30.45 | 0.77 | 40.2 | 270.6 | 651.4 |
| 106.2 | 40.44 | -30.45 | 0.82 | 42.7 | 1.0 | 71.2 |
| 111.0 | 40.44 | -30.45 | 0.88 | 44.6 | 1.0 | 71.2 |
| 115.8 | 40.44 | -30.45 | 0.96 | 46.6 | 1.0 | 71.2 |
| 120.6 | 40.44 | -30.45 | 1.05 | 48.5 | 1.0 | 71.2 |
| 125.3 | 40.44 | -30.45 | 1.16 | 50.4 | 1.0 | 71.2 |
| 130.1 | 40.44 | -30.45 | 1.27 | 52.3 | 1.0 | 71.2 |
| 134.9 | 40.44 | -30.45 | 1.39 | 54.2 | 1.0 | 71.2 |
| 139.7 | 40.44 | -30.45 | 1.52 | 56.2 | 1.0 | 71.2 |
| 144.4 | 40.44 | -30.45 | 1.66 | 58.1 | 1.0 | 71.2 |
| 149.2 | 40.44 | -30.45 | 1.81 | 60.0 | 1.0 | 71.2 |
| 154.0 | 40.44 | -30.45 | 1.96 | 61.9 | 1.0 | 71.2 |
| 158.7 | 40.44 | -30.45 | 2.12 | 63.8 | 1.0 | 71.2 |
| 182.9 | 40.44 | -30.45 | 2.87 | 73.5 | 257.6 | 591.8 |
| 212.7 | 40.44 | -30.45 | 3.63 | 85.5 | 236.4 | 576.8 |
| 241.2 | 40.44 | -30.45 | 4.23 | 97.0 | 187.3 | 537.7 |
| 248.7 | 40.44 | -30.45 | 4.38 | 100.0 | 0.0 | 0.0 |

2008年10月27日

Tank Capacity Tables

DRILL WATER TANKS N9 STBD

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|-------|------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | |
| 31.5 | 40.44 | 30.45 | 0.26 | 12.7 | 227.6 | 623.8 |
| 65.3 | 40.44 | 30.45 | 0.51 | 26.3 | 259.3 | 644.5 |
| 100.0 | 40.44 | 30.45 | 0.77 | 40.2 | 270.6 | 651.4 |
| 106.2 | 40.44 | 30.45 | 0.82 | 42.7 | 1.0 | 71.2 |
| 111.0 | 40.44 | 30.45 | 0.88 | 44.6 | 1.0 | 71.2 |
| 115.8 | 40.44 | 30.45 | 0.96 | 46.6 | 1.0 | 71.2 |
| 120.6 | 40.44 | 30.45 | 1.05 | 48.5 | 1.0 | 71.2 |
| 125.3 | 40.44 | 30.45 | 1.16 | 50.4 | 1.0 | 71.2 |
| 130.1 | 40.44 | 30.45 | 1.27 | 52.3 | 1.0 | 71.2 |
| 134.9 | 40.44 | 30.45 | 1.39 | 54.2 | 1.0 | 71.2 |
| 139.7 | 40.44 | 30.45 | 1.52 | 56.2 | 1.0 | 71.2 |
| 144.4 | 40.44 | 30.45 | 1.66 | 58.1 | 1.0 | 71.2 |
| 149.2 | 40.44 | 30.45 | 1.81 | 60.0 | 1.0 | 71.2 |
| 154.0 | 40.44 | 30.45 | 1.96 | 61.9 | 1.0 | 71.2 |
| 158.7 | 40.44 | 30.45 | 2.12 | 63.8 | 1.0 | 71.2 |
| 182.9 | 40.44 | 30.45 | 2.87 | 73.5 | 257.6 | 591.8 |
| 212.7 | 40.44 | 30.45 | 3.63 | 85.5 | 236.4 | 576.8 |
| 241.2 | 40.44 | 30.45 | 4.23 | 97.0 | 187.3 | 537.7 |
| 248.7 | 40.44 | 30.45 | 4.38 | 100.0 | 0.0 | 0.0 |

É CÔPIA FIEL DO DOCUMENTO ORIGINAL.

USF - Centro de Engenharia e Pesquisa

DI - 10/10/2018

Tank Capacity Tables

DRILL WATER TANKS N14 PORT

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|--------|------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | 0.0 |
| 31.8 | 72.39 | -24.38 | 0.26 | 11.7 | 238.2 | 652.1 |
| 66.4 | 72.39 | -24.25 | 0.51 | 24.4 | 273.8 | 683.1 |
| 102.1 | 72.39 | -24.17 | 0.77 | 37.5 | 286.4 | 693.5 |
| 109.0 | 72.39 | -24.00 | 0.83 | 40.0 | 1.0 | 110.6 |
| 114.5 | 72.39 | -23.84 | 0.90 | 42.1 | 1.0 | 110.6 |
| 120.0 | 72.39 | -23.70 | 0.98 | 44.1 | 1.0 | 110.6 |
| 125.5 | 72.39 | -23.57 | 1.08 | 46.1 | 1.0 | 110.6 |
| 131.0 | 72.39 | -23.45 | 1.20 | 48.1 | 1.0 | 110.6 |
| 136.5 | 72.39 | -23.35 | 1.32 | 50.1 | 1.0 | 110.6 |
| 141.5 | 72.39 | -23.26 | 1.44 | 52.0 | 1.0 | 95.3 |
| 146.2 | 72.39 | -23.17 | 1.56 | 53.7 | 1.0 | 95.3 |
| 151.0 | 72.39 | -23.09 | 1.69 | 55.4 | 1.0 | 95.3 |
| 156.2 | 72.39 | -23.02 | 1.84 | 57.3 | 1.0 | 110.6 |
| 161.7 | 72.39 | -22.95 | 2.01 | 59.4 | 1.0 | 110.6 |
| 167.2 | 72.39 | -22.89 | 2.18 | 61.4 | 1.0 | 110.6 |
| 195.6 | 72.39 | -23.01 | 3.00 | 71.8 | 280.8 | 600.9 |
| 230.7 | 72.39 | -23.15 | 3.80 | 84.7 | 250.8 | 663.4 |
| 263.7 | 72.39 | -23.27 | 4.42 | 96.8 | 189.0 | 601.6 |
| 272.3 | 72.39 | -23.31 | 4.57 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

1073

DRILL WATER TANKS N14 STBD

| Volume | LCG | TCG | VCG | % | I _{trans} | I _{long} |
|--------|-------|-------|------|-------|--------------------|-------------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | |
| 31.8 | 72.39 | 24.38 | 0.26 | 11.7 | 238.2 | 652.1 |
| 66.4 | 72.39 | 24.38 | 0.51 | 24.4 | 273.8 | 683.1 |
| 102.1 | 72.39 | 24.38 | 0.77 | 37.5 | 286.4 | 693.5 |
| 109.0 | 72.39 | 24.38 | 0.83 | 40.0 | 1.1 | 110.6 |
| 114.5 | 72.39 | 24.38 | 0.90 | 42.1 | 1.1 | 110.6 |
| 120.0 | 72.39 | 24.38 | 0.98 | 44.1 | 1.1 | 110.6 |
| 125.5 | 72.39 | 24.38 | 1.08 | 46.1 | 1.1 | 110.6 |
| 131.0 | 72.39 | 24.38 | 1.20 | 48.1 | 1.1 | 110.6 |
| 136.5 | 72.39 | 24.38 | 1.32 | 50.1 | 1.1 | 110.6 |
| 141.5 | 72.39 | 24.38 | 1.44 | 52.0 | 1.0 | 95.3 |
| 146.2 | 72.39 | 24.38 | 1.56 | 53.7 | 1.0 | 95.3 |
| 151.0 | 72.39 | 24.38 | 1.69 | 55.4 | 1.0 | 95.3 |
| 156.2 | 72.39 | 24.38 | 1.84 | 57.3 | 1.1 | 110.6 |
| 161.7 | 72.39 | 24.38 | 2.01 | 59.4 | 1.1 | 110.6 |
| 167.2 | 72.39 | 24.38 | 2.18 | 61.4 | 1.1 | 110.6 |
| 195.6 | 72.39 | 24.38 | 3.00 | 71.8 | 280.8 | 600.9 |
| 230.7 | 72.39 | 24.38 | 3.80 | 84.7 | 250.8 | 663.4 |
| 263.7 | 72.39 | 24.38 | 4.42 | 96.8 | 187.0 | 601.6 |
| 272.3 | 72.39 | 24.38 | 4.57 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

DRILL WATER TANKS N15 PORT

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|--------|------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | 0.0 |
| 31.5 | 72.34 | -30.45 | 0.26 | 12.1 | 227.6 | 623.8 |
| 64.9 | 72.34 | -30.45 | 0.51 | 25.0 | 252.9 | 522.8 |
| 97.3 | 72.34 | -30.45 | 0.76 | 37.4 | 264.2 | 529.3 |
| 103.5 | 72.34 | -30.45 | 0.81 | 39.7 | 1.0 | 71.2 |
| 108.3 | 72.34 | -30.45 | 0.88 | 41.6 | 1.0 | 71.2 |
| 113.1 | 72.34 | -30.45 | 0.96 | 43.4 | 1.0 | 71.2 |
| 117.9 | 72.34 | -30.45 | 1.05 | 45.3 | 1.0 | 71.2 |
| 122.7 | 72.34 | -30.45 | 1.16 | 47.1 | 1.0 | 71.2 |
| 127.5 | 72.34 | -30.45 | 1.27 | 49.0 | 1.0 | 71.2 |
| 132.3 | 72.34 | -30.45 | 1.40 | 50.8 | 1.0 | 71.2 |
| 137.2 | 72.34 | -30.45 | 1.53 | 52.7 | 1.0 | 71.2 |
| 142.0 | 72.34 | -30.45 | 1.68 | 54.5 | 1.0 | 71.2 |
| 146.8 | 72.34 | -30.45 | 1.83 | 56.4 | 1.0 | 71.2 |
| 151.6 | 72.34 | -30.45 | 1.98 | 58.2 | 1.0 | 71.2 |
| 156.4 | 72.34 | -30.45 | 2.15 | 60.1 | 1.0 | 71.2 |
| 184.0 | 72.34 | -30.45 | 2.99 | 70.7 | 267.1 | 71.2 |
| 218.4 | 72.34 | -30.45 | 3.82 | 83.9 | 247.1 | 649.3 |
| 251.4 | 72.34 | -30.45 | 4.47 | 96.6 | 201.0 | 636.7 |
| 260.3 | 72.34 | -30.45 | 4.62 | 100.0 | 0.0 | 603.3 |

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100% de conformidade

100% de conformidade

Tank Capacity Tables

1015

DRILL WATER TANKS N15 STBD

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|-------|------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | |
| 31.5 | 72.34 | 30.45 | 0.26 | 12.1 | 227.6 | 623.8 |
| 64.9 | 72.34 | 30.45 | 0.51 | 25.0 | 252.9 | 522.8 |
| 97.3 | 72.34 | 30.45 | 0.76 | 37.4 | 264.2 | 529.3 |
| 103.5 | 72.34 | 30.45 | 0.81 | 39.7 | 1.0 | 71.2 |
| 108.3 | 72.34 | 30.45 | 0.88 | 41.6 | 1.0 | 71.2 |
| 113.1 | 72.34 | 30.45 | 0.96 | 43.4 | 1.0 | 71.2 |
| 117.9 | 72.34 | 30.45 | 1.05 | 45.3 | 1.0 | 71.2 |
| 122.7 | 72.34 | 30.45 | 1.16 | 47.1 | 1.0 | 71.2 |
| 127.5 | 72.34 | 30.45 | 1.27 | 49.0 | 1.0 | 71.2 |
| 132.3 | 72.34 | 30.45 | 1.40 | 50.8 | 1.0 | 71.2 |
| 137.2 | 72.34 | 30.45 | 1.53 | 52.7 | 1.0 | 71.2 |
| 142.0 | 72.34 | 30.45 | 1.68 | 54.5 | 1.0 | 71.2 |
| 146.8 | 72.34 | 30.45 | 1.83 | 56.4 | 1.0 | 71.2 |
| 151.6 | 72.34 | 30.45 | 1.98 | 58.2 | 1.0 | 71.2 |
| 156.4 | 72.34 | 30.45 | 2.15 | 60.1 | 1.0 | 71.2 |
| 184.0 | 72.34 | 30.45 | 2.99 | 70.7 | 267.1 | 71.2 |
| 218.4 | 72.34 | 30.45 | 3.82 | 83.9 | 247.1 | 649.3 |
| 251.4 | 72.34 | 30.45 | 4.47 | 96.6 | 201.0 | 636.7 |
| 260.3 | 72.34 | 30.45 | 4.62 | 100.0 | 0.0 | 603.3 |

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

Tank Capacity Tables

POTABLE WATER TANK 1 PORT

| Volume | LCG | TCG | VCG | % | I _{trans} | I _{long} |
|--------|-------|--------|-------|-------|--------------------|-------------------|
| 0.0 | | | 22.60 | 0.0 | 0.0 | 0.0 |
| 8.0 | 84.58 | -29.99 | 22.99 | 4.1 | 62.9 | 286.6 |
| 15.9 | 84.58 | -29.99 | 23.11 | 8.2 | 62.9 | 286.6 |
| 23.9 | 84.58 | -29.99 | 23.24 | 12.3 | 62.9 | 286.6 |
| 31.8 | 84.58 | -29.99 | 23.36 | 16.4 | 62.9 | 286.6 |
| 39.8 | 84.58 | -29.99 | 23.49 | 20.5 | 62.9 | 286.6 |
| 47.7 | 84.58 | -29.99 | 23.61 | 24.6 | 62.9 | 286.6 |
| 55.7 | 84.58 | -29.99 | 23.74 | 28.7 | 62.9 | 286.6 |
| 63.6 | 84.58 | -29.99 | 23.86 | 32.8 | 62.9 | 286.6 |
| 71.6 | 84.58 | -29.99 | 23.99 | 36.9 | 62.9 | 286.6 |
| 79.5 | 84.58 | -29.99 | 24.11 | 41.0 | 62.9 | 286.6 |
| 87.5 | 84.58 | -29.99 | 24.24 | 45.1 | 62.9 | 286.6 |
| 95.4 | 84.58 | -29.99 | 24.36 | 49.2 | 62.9 | 286.6 |
| 103.4 | 84.58 | -29.99 | 24.49 | 53.3 | 62.9 | 286.6 |
| 111.4 | 84.58 | -29.99 | 24.61 | 57.4 | 62.9 | 286.6 |
| 119.3 | 84.58 | -29.99 | 24.74 | 61.5 | 62.9 | 286.6 |
| 127.3 | 84.58 | -29.99 | 24.86 | 65.6 | 62.9 | 286.6 |
| 135.2 | 84.58 | -29.99 | 24.99 | 69.7 | 62.9 | 286.6 |
| 143.2 | 84.58 | -29.99 | 25.11 | 73.8 | 62.9 | 286.6 |
| 151.1 | 84.58 | -29.99 | 25.24 | 77.9 | 62.9 | 286.6 |
| 159.1 | 84.58 | -29.99 | 25.36 | 82.0 | 62.9 | 286.6 |
| 167.0 | 84.58 | -29.99 | 25.49 | 86.1 | 62.9 | 286.6 |
| 175.0 | 84.58 | -29.99 | 25.61 | 90.2 | 62.9 | 286.6 |
| 182.9 | 84.58 | -29.99 | 25.74 | 94.3 | 62.9 | 286.6 |
| 190.9 | 84.58 | -29.99 | 25.86 | 98.4 | 62.9 | 286.6 |
| 194.0 | 84.58 | -29.99 | 25.91 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

POTABLE WATER TANK 1 STBD

| Volume | LCG | TCG | VCG | % | I _{trans} | I _{long} |
|--------|-------|-------|-------|-------|--------------------|-------------------|
| 0.0 | | | 22.86 | 0.0 | 0.0 | |
| 8.0 | 84.58 | 29.99 | 22.99 | 4.1 | 62.9 | 286.6 |
| 15.9 | 84.58 | 29.99 | 23.11 | 8.2 | 62.9 | 286.6 |
| 23.9 | 84.58 | 29.99 | 23.24 | 12.3 | 62.9 | 286.6 |
| 31.8 | 84.58 | 29.99 | 23.36 | 16.4 | 62.9 | 286.6 |
| 39.8 | 84.58 | 29.99 | 23.49 | 20.5 | 62.9 | 286.6 |
| 47.7 | 84.58 | 29.99 | 23.61 | 24.6 | 62.9 | 286.6 |
| 55.7 | 84.58 | 29.99 | 23.74 | 28.7 | 62.9 | 286.6 |
| 63.6 | 84.58 | 29.99 | 23.86 | 32.8 | 62.9 | 286.6 |
| 71.6 | 84.58 | 29.99 | 23.99 | 36.9 | 62.9 | 286.6 |
| 79.5 | 84.58 | 29.99 | 24.11 | 41.0 | 62.9 | 286.6 |
| 87.5 | 84.58 | 29.99 | 24.24 | 45.1 | 62.9 | 286.6 |
| 95.4 | 84.58 | 29.99 | 24.36 | 49.2 | 62.9 | 286.6 |
| 103.4 | 84.58 | 29.99 | 24.49 | 53.3 | 62.9 | 286.6 |
| 111.4 | 84.58 | 29.99 | 24.61 | 57.4 | 62.9 | 286.6 |
| 119.3 | 84.58 | 29.99 | 24.74 | 61.5 | 62.9 | 286.6 |
| 127.3 | 84.58 | 29.99 | 24.86 | 65.6 | 62.9 | 286.6 |
| 135.2 | 84.58 | 29.99 | 24.99 | 69.7 | 62.9 | 286.6 |
| 143.2 | 84.58 | 29.99 | 25.11 | 73.8 | 62.9 | 286.6 |
| 151.1 | 84.58 | 29.99 | 25.24 | 77.9 | 62.9 | 286.6 |
| 159.1 | 84.58 | 29.99 | 25.36 | 82.0 | 62.9 | 286.6 |
| 167.0 | 84.58 | 29.99 | 25.49 | 86.1 | 62.9 | 286.6 |
| 175.0 | 84.58 | 29.99 | 25.61 | 90.2 | 62.9 | 286.6 |
| 182.9 | 84.58 | 29.99 | 25.74 | 94.3 | 62.9 | 286.6 |
| 190.9 | 84.58 | 29.99 | 25.86 | 98.4 | 62.9 | 286.6 |
| 194.0 | 84.58 | 29.99 | 25.91 | 100.0 | 0.0 | 0.0 |

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MA-3010.38-1320-915-NBD-909

Tank Capacity Tables

1079 1/2

DAILY POTABLE WATER TANK

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|------|-------|-------|-------------|------------|
| 0.0 | 78.87 | | 0.00 | 0.0 | 0.0 | 0.0 |
| 1.0 | 78.87 | 4.98 | 36.68 | 6.6 | 2.1 | 2.2 |
| 2.0 | 78.87 | 4.98 | 36.78 | 13.1 | 2.1 | 2.2 |
| 3.0 | 78.87 | 4.98 | 36.88 | 19.7 | 2.1 | 2.2 |
| 4.0 | 78.87 | 4.98 | 36.98 | 26.2 | 2.1 | 2.2 |
| 4.9 | 78.87 | 4.98 | 37.08 | 32.5 | 2.1 | 2.2 |
| 6.0 | 78.87 | 4.98 | 37.18 | 39.4 | 2.1 | 2.2 |
| 7.0 | 78.87 | 4.98 | 37.28 | 45.9 | 2.1 | 2.2 |
| 8.0 | 78.87 | 4.98 | 37.38 | 52.5 | 2.1 | 2.2 |
| 9.0 | 78.87 | 4.98 | 37.48 | 59.0 | 2.1 | 2.2 |
| 10.0 | 78.87 | 4.98 | 37.58 | 65.6 | 2.1 | 2.2 |
| 11.0 | 78.87 | 4.98 | 37.68 | 72.2 | 2.1 | 2.2 |
| 12.0 | 78.87 | 4.98 | 37.78 | 78.7 | 2.1 | 2.2 |
| 13.0 | 78.87 | 4.98 | 37.88 | 85.3 | 2.1 | 2.2 |
| 14.0 | 78.87 | 4.98 | 37.98 | 91.9 | 2.1 | 2.2 |
| 15.0 | 78.87 | 4.98 | 38.08 | 98.4 | 2.1 | 2.2 |
| 15.2 | | 4.98 | 38.10 | 100.0 | 0.0 | 0.0 |

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MA-3010.38-1320-915-NBD-909

Tank Capacity Tables

DRAINS STORAGE TANK 1 PORT

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|--------|-------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | 0.0 |
| 20.0 | 84.96 | -22.97 | 20.06 | 4.4 | 131.5 | 922.0 |
| 40.0 | 84.96 | -22.97 | 20.31 | 8.9 | 131.5 | 922.0 |
| 60.0 | 84.96 | -22.97 | 20.56 | 13.3 | 131.5 | 922.0 |
| 80.0 | 84.96 | -22.97 | 20.81 | 17.7 | 131.5 | 922.0 |
| 100.0 | 84.96 | -22.97 | 21.06 | 22.2 | 131.5 | 922.0 |
| 120.0 | 84.96 | -22.97 | 21.31 | 26.6 | 131.5 | 922.0 |
| 141.5 | 84.96 | -22.97 | 21.58 | 31.3 | 138.4 | 1018.4 |
| 163.1 | 84.96 | -22.97 | 21.84 | 36.1 | 138.4 | 1018.4 |
| 184.7 | 84.96 | -22.97 | 22.10 | 40.9 | 138.4 | 1018.4 |
| 206.4 | 84.96 | -22.97 | 22.36 | 45.7 | 138.4 | 1018.4 |
| 228.0 | 84.96 | -22.97 | 22.62 | 50.5 | 138.4 | 1018.4 |
| 249.6 | 84.96 | -22.97 | 22.87 | 55.3 | 138.4 | 1018.4 |
| 271.2 | 84.96 | -22.97 | 23.12 | 60.1 | 138.4 | 1018.4 |
| 292.8 | 84.96 | -22.97 | 23.38 | 64.9 | 138.4 | 1018.4 |
| 314.5 | 84.96 | -22.97 | 23.63 | 69.7 | 138.4 | 1018.4 |
| 336.1 | 84.96 | -22.97 | 23.88 | 74.4 | 138.4 | 1018.4 |
| 357.3 | 84.96 | -22.97 | 24.14 | 79.2 | 138.4 | 1018.4 |
| 379.3 | 84.96 | -22.97 | 24.39 | 84.0 | 138.4 | 1018.4 |
| 400.9 | 84.96 | -22.97 | 24.64 | 88.8 | 138.4 | 1018.4 |
| 422.5 | 84.96 | -22.97 | 24.89 | 93.6 | 138.4 | 1018.4 |
| 444.2 | 84.96 | -22.97 | 25.14 | 98.4 | 138.4 | 1018.4 |
| 451.4 | 84.96 | -22.97 | 25.23 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

1000

DRAINS STORAGE TANK 1 STBD

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|-------|-------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | |
| 20.0 | 84.96 | 22.97 | 20.06 | 4.4 | 131.5 | 922.0 |
| 40.0 | 84.96 | 22.97 | 20.31 | 8.9 | 131.5 | 922.0 |
| 60.0 | 84.96 | 22.97 | 20.56 | 13.3 | 131.5 | 922.0 |
| 80.0 | 84.96 | 22.97 | 20.81 | 17.7 | 131.5 | 922.0 |
| 100.0 | 84.96 | 22.97 | 21.06 | 22.2 | 131.5 | 922.0 |
| 120.0 | 84.96 | 22.97 | 21.31 | 26.6 | 131.5 | 922.0 |
| 141.5 | 84.96 | 22.97 | 21.58 | 31.3 | 138.4 | 1018.4 |
| 163.1 | 84.96 | 22.97 | 21.84 | 36.1 | 138.4 | 1018.4 |
| 184.7 | 84.96 | 22.97 | 22.10 | 40.9 | 138.4 | 1018.4 |
| 206.4 | 84.96 | 22.97 | 22.36 | 45.7 | 138.4 | 1018.4 |
| 228.0 | 84.96 | 22.97 | 22.62 | 50.5 | 138.4 | 1018.4 |
| 249.6 | 84.96 | 22.97 | 22.87 | 55.3 | 138.4 | 1018.4 |
| 271.2 | 84.96 | 22.97 | 23.12 | 60.1 | 138.4 | 1018.4 |
| 292.8 | 84.96 | 22.97 | 23.38 | 64.9 | 138.4 | 1018.4 |
| 314.5 | 84.96 | 22.97 | 23.63 | 69.7 | 138.4 | 1018.4 |
| 336.1 | 84.96 | 22.97 | 23.88 | 74.4 | 138.4 | 1018.4 |
| 357.3 | 84.96 | 22.97 | 24.14 | 79.2 | 138.4 | 1018.4 |
| 379.3 | 84.96 | 22.97 | 24.39 | 84.0 | 138.4 | 1018.4 |
| 400.9 | 84.96 | 22.97 | 24.64 | 88.8 | 138.4 | 1018.4 |
| 422.5 | 84.96 | 22.97 | 24.89 | 93.6 | 138.4 | 1018.4 |
| 444.2 | 84.96 | 22.97 | 25.14 | 98.4 | 138.4 | 1018.4 |
| 451.4 | 84.96 | 22.97 | 25.23 | 100.0 | 0.0 | 0.0 |

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Tank Capacity Tables

WASTE OIL TANKS N1 PORT

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|-------|-------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | 0.0 |
| 1.3 | 80.72 | 24.56 | 21.59 | 6.6 | 0.3 | 1.0 |
| 2.5 | 80.72 | 24.56 | 21.84 | 13.1 | 0.3 | 1.0 |
| 3.8 | 80.72 | 24.56 | 22.09 | 19.7 | 0.3 | 1.0 |
| 5.0 | 80.72 | 24.56 | 22.34 | 26.2 | 0.3 | 1.0 |
| 6.3 | 80.72 | 24.56 | 22.59 | 32.8 | 0.3 | 1.0 |
| 7.5 | 80.72 | 24.56 | 22.84 | 39.4 | 0.3 | 1.0 |
| 8.8 | 80.72 | 24.56 | 23.09 | 45.9 | 0.3 | 1.0 |
| 10.1 | 80.72 | 24.56 | 23.34 | 52.5 | 0.3 | 1.0 |
| 11.3 | 80.72 | 24.56 | 23.59 | 59.1 | 0.3 | 1.0 |
| 12.6 | 80.72 | 24.56 | 23.84 | 65.6 | 0.3 | 1.0 |
| 13.8 | 80.72 | 24.56 | 24.09 | 72.2 | 0.3 | 1.0 |
| 15.1 | 80.72 | 24.56 | 24.34 | 78.7 | 0.3 | 1.0 |
| 16.3 | 80.72 | 24.56 | 24.59 | 85.3 | 0.3 | 1.0 |
| 17.6 | 80.72 | 24.56 | 24.84 | 91.9 | 0.3 | 1.0 |
| 18.9 | 80.72 | 24.56 | 25.09 | 98.4 | 0.3 | 1.0 |
| 19.2 | 80.72 | 24.56 | 25.15 | 100.0 | 0.0 | 0.0 |

CONFIDENTIAL DOCUMENT

Tank Capacity Tables



WASTE OIL TANK N1 STBD

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|-------|-------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | |
| 1.3 | 80.72 | 24.56 | 21.59 | 6.6 | 0.3 | 1.0 |
| 2.5 | 80.72 | 24.56 | 21.84 | 13.1 | 0.3 | 1.0 |
| 3.8 | 80.72 | 24.56 | 22.09 | 19.7 | 0.3 | 1.0 |
| 5.0 | 80.72 | 24.56 | 22.34 | 26.2 | 0.3 | 1.0 |
| 6.3 | 80.72 | 24.56 | 22.59 | 32.8 | 0.3 | 1.0 |
| 7.5 | 80.72 | 24.56 | 22.84 | 39.4 | 0.3 | 1.0 |
| 8.8 | 80.72 | 24.56 | 23.09 | 45.9 | 0.3 | 1.0 |
| 10.1 | 80.72 | 24.56 | 23.34 | 52.5 | 0.3 | 1.0 |
| 11.3 | 80.72 | 24.56 | 23.59 | 59.1 | 0.3 | 1.0 |
| 12.6 | 80.72 | 24.56 | 23.84 | 65.6 | 0.3 | 1.0 |
| 13.8 | 80.72 | 24.56 | 24.09 | 72.2 | 0.3 | 1.0 |
| 15.1 | 80.72 | 24.56 | 24.34 | 78.7 | 0.3 | 1.0 |
| 16.3 | 80.72 | 24.56 | 24.59 | 85.3 | 0.3 | 1.0 |
| 17.6 | 80.72 | 24.56 | 24.84 | 91.9 | 0.3 | 1.0 |
| 18.9 | 80.72 | 24.56 | 25.09 | 98.4 | 0.3 | 1.0 |
| 19.2 | 80.72 | 24.56 | 25.15 | 100.0 | 0.0 | 0.0 |

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ESTAFEL DO DIÁRIO

BILGE HOLDING TANK STBD

| Volume | LCG | TCG | VCG | % | I_{trans} | I_{long} |
|--------|-------|-------|------|-------|-------------|------------|
| 0.0 | | | 0.00 | 0.0 | 0.0 | 0.0 |
| 0.3 | 78.49 | 26.29 | 0.05 | 6.5 | 1.5 | 0.7 |
| 0.7 | 78.49 | 26.29 | 0.10 | 13.1 | 1.5 | 0.7 |
| 1.0 | 78.49 | 26.29 | 0.15 | 19.6 | 1.5 | 0.7 |
| 1.4 | 78.49 | 26.29 | 0.20 | 26.2 | 1.5 | 0.7 |
| 1.7 | 78.49 | 26.29 | 0.25 | 32.7 | 1.5 | 0.7 |
| 2.1 | 78.49 | 26.29 | 0.30 | 39.2 | 1.5 | 0.7 |
| 2.4 | 78.49 | 26.29 | 0.35 | 45.8 | 1.5 | 0.7 |
| 2.8 | 78.49 | 26.29 | 0.40 | 52.3 | 1.5 | 0.7 |
| 3.1 | 78.49 | 26.29 | 0.45 | 58.9 | 1.5 | 0.7 |
| 3.4 | 78.49 | 26.29 | 0.50 | 65.4 | 1.5 | 0.7 |
| 3.8 | 78.49 | 26.29 | 0.55 | 71.9 | 1.5 | 0.7 |
| 4.1 | 78.49 | 26.29 | 0.60 | 78.5 | 1.5 | 0.7 |
| 4.5 | 78.49 | 26.29 | 0.65 | 85.0 | 1.5 | 0.7 |
| 4.8 | 78.49 | 26.29 | 0.70 | 91.6 | 1.5 | 0.7 |
| 5.2 | 78.49 | 26.29 | 0.75 | 98.1 | 1.5 | 0.7 |
| 5.3 | 78.49 | 26.29 | 0.76 | 100.0 | 0.0 | 0.0 |

~~CONFIDENTIAL~~

7.11 LOADING CASES FOR SEA CHEST MAINTENANCE

Loading Conditions attached:

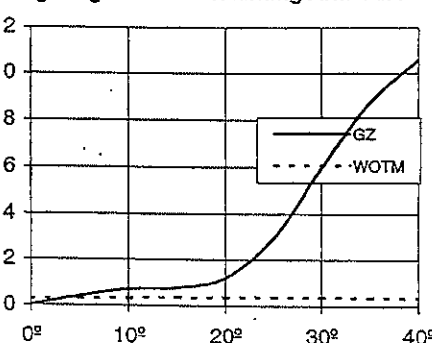
| Description | Draft | Comments |
|--|--------|---|
| Maintenance of four Seachests on Port side | 21.99m | No change to Ballast Arrangement required |

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| Sea Water Ballast Tanks | Max Vol. m³ | Density t/m³ | % FCG from CL | VCG m | FSC _T m | FSC _L m |
|-------------------------|-------------|--------------|--------------------|-------|--------------------|--------------------|
| SW Ballast 1P | 886.7 | 1.025 | 99% 0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 99% 0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 99% 0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 99% 0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 1% 3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 1% 6.1 | 40.6 | 0.000 | 0.000 |
| SW Ballast 4P | 798.3 | 1.025 | 99% 0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 99% 6.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1% 4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1% 0.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1% 8.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 47% 5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 99% 11.7 | 43.7 | 0.004 | 0.013 |
| SW Ballast 7S | 555.2 | 1.025 | 1% 1.5 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 99% 0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 99% 2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 99% 0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 99% 0.0 | 0.0 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1% 0.8 | 5.42 | 0.007 | 0.055 |
| SW Ballast 16S | 249.7 | 1.025 | 1% | | | |
| SW Ballast 17P | 523.9 | 1.025 | 31% 0.25 | 22.11 | 0.012 | 0.069 |
| SW Ballast 17S | 523.9 | 1.025 | 1% | | | |
| SW Ballast 18P | 555.2 | 1.025 | 99% ical Stability | | | |
| SW Ballast 18S | 555.2 | 1.025 | 99% | | | |
| SW Ballast 19P | 728.8 | 1.025 | 1% rected VCG = | | 22.12 m | 22.18 m |
| SW Ballast 19S | 728.8 | 1.025 | 1% Γ / KML = | | 26.80 m | 27.20 m |
| SW Ballast 20P | 768.2 | 1.025 | 1% T / GML = | | 4.68 m | 5.02 m |
| SW Ballast 20S | 768.2 | 1.025 | 92% | | | |
| SW Ballast 21P | 963.7 | 1.025 | 1% ility Margin | | | |
| SW Ballast 21S | 963.7 | 1.025 | 1% | | | |
| SW Ballast 22P | 1067.3 | 1.025 | 1% wable VCG = | | | 23.04 m |
| SW Ballast 22S | 1067.3 | 1.025 | 1% ility Margin = | | | 0.86 m |
| SW Ballast 23P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 24P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1% | | | |
| SW Ballast 25P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 26P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 26S | 980.8 | 1.025 | 1% | | | |
| SW Ballast Total | | | | | | |

Righting Arm & Overturning Arm Curve



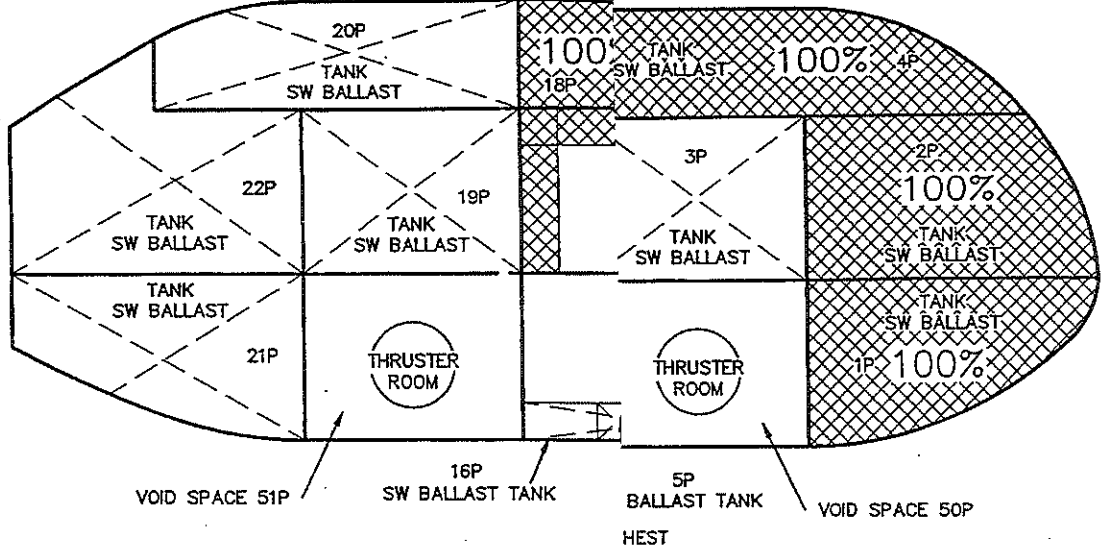
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| Prepared | | |
| Checked | | |

Operating Condition: Typical Maintenance of Sea Chests - CLOS

| Item | ID | % | Density | Weight | LCG | Item | ID | Chain | Weight | LCG | TCG | VCG |
|--------------------------|-----------------|------|---------|--------|-------|------------------------|-------|---------|--------|--------|--------|-------|
| Water Tank | 8P | 100% | 1.000 | 276.2 | 40.25 | Port Aft (Winch 2) | 1aP | 337 | 63.9 | 87.52 | -30.50 | 4.60 |
| Water Tank | 8S | 100% | 1.000 | 276.2 | 40.25 | Port Aft (Winch 4) | 1bP | 337 | 63.9 | 81.65 | -30.50 | 4.60 |
| Water Tanks | 9P | 100% | 1.000 | 248.5 | 40.53 | Port Aft (Winch 3) | 5P | 337 | 63.9 | 86.47 | -31.12 | 16.19 |
| Water Tanks | 9S | 100% | 1.000 | 248.5 | 40.53 | Port Aft (Winch 1) | 9P | 337 | 63.9 | 91.05 | -33.48 | 13.72 |
| Water Tanks | 14P | 0% | 1.000 | 0.0 | 72.39 | Port Fwd (Winch 5) | 2aP | 337 | 63.9 | 31.13 | -30.50 | 4.60 |
| Water Tanks | 14S | 0% | 1.000 | 0.0 | 72.39 | Port Fwd (Winch 7) | 2bP | 337 | 63.9 | 25.26 | -30.50 | 4.60 |
| Water Tanks | 15P | 0% | 1.000 | 0.0 | 72.34 | Port Fwd (Winch 6) | 6P | 337 | 63.9 | 26.31 | -31.12 | 16.19 |
| Water Tanks | 15S | 0% | 1.000 | 0.0 | 72.34 | Port Fwd (Winch 8) | 10P | 337 | 63.9 | 21.73 | -33.48 | 13.72 |
| Water Tanks (Process FW) | 0 | | | 1049.3 | 40.38 | Port Fwd (Winch 13) | 4aS | 337 | 63.9 | 81.65 | 30.50 | 4.60 |
| | | | | | | Port Aft (Winch 15) | 4bS | 337 | 63.9 | 87.52 | 30.50 | 4.60 |
| | | | | | | Port Aft (Winch 14) | 8S | 337 | 63.9 | 86.47 | 31.12 | 16.19 |
| | | | | | | Port Aft (Winch 16) | 12S | 337 | 63.9 | 91.05 | 33.48 | 13.72 |
| Water Tank | 1P | 100% | 1.000 | 193.8 | 84.58 | Port Fwd (Winch 10) | 3aS | 337 | 63.9 | 25.26 | 30.50 | 4.60 |
| Water Tank | 1S | 100% | 1.000 | 193.8 | 84.58 | Port Fwd (Winch 12) | 3bS | 337 | 63.9 | 31.13 | 30.50 | 4.60 |
| Water Day Tank | 0 | 100% | 1.000 | 15.2 | 78.87 | Port Fwd (Winch 11) | 7S | 337 | 63.9 | 26.31 | 31.12 | 16.19 |
| | | | | | | Port Fwd (Winch 9) | 11S | 337 | 63.9 | 21.73 | 33.48 | 13.72 |
| Water | 0 | | | 402.7 | 84.36 | | 0 | 5392 | 1021.9 | 56.39 | 0.00 | 9.78 |
| Item | ID | % | Density | Weight | LCG | Item | ID | Tension | Weight | LCG | TCG | VCG |
| Oil Tank | 10P | 100% | 0.960 | 586.3 | 51.05 | Oil Forces | S1 | 140 | 111.7 | 24.63 | 38.00 | 18.29 |
| Oil Tank | 10S | 100% | 0.960 | 586.3 | 51.05 | inch 9) | S2 | 140 | 112.1 | 28.19 | 38.00 | 18.29 |
| Oil Tank | 12P | 100% | 0.960 | 589.5 | 61.72 | inch 10) | S3 | 140 | 112.3 | 31.75 | 38.00 | 18.29 |
| Oil Tank | 12S | 100% | 0.960 | 589.5 | 61.72 | inch 11) | S4 | 140 | 112.4 | 35.31 | 38.00 | 18.29 |
| Overflow | P | 100% | 0.960 | 16.4 | 78.94 | inch 12) | S5 | 140 | 112.3 | 81.02 | 38.00 | 18.29 |
| Overflow | S | 100% | 0.960 | 15.1 | 78.87 | inch 13) | S6 | 140 | 112.6 | 84.58 | 38.00 | 18.29 |
| | | | | | | inch 14) | S7 | 140 | 112.6 | 88.14 | 38.00 | 18.29 |
| Oil | 0 | | | 2383.0 | 56.70 | inch 15) | S8 | 140 | 112.5 | 91.70 | 38.00 | 18.29 |
| | | | | | | inch 16) | P1 | 140 | 107.0 | 24.63 | -38.00 | 18.29 |
| Oil | | | | | | inch 7) | P2 | 140 | 106.5 | 28.19 | -38.00 | 18.29 |
| Oil | N1P | 100% | 0.870 | 3.6 | 67.61 | inch 8) | P3 | 140 | 106.1 | 31.75 | -38.00 | 18.29 |
| Oil | N1S | 100% | 0.870 | 3.6 | 78.58 | inch 5) | P4 | 140 | 105.5 | 35.31 | -38.00 | 18.29 |
| Oil | N1P | 100% | 0.870 | 105.3 | 74.52 | inch 4) | P5 | 140 | 99.6 | 81.02 | -38.00 | 18.29 |
| Oil | N2P | 100% | 0.870 | 110.6 | 74.60 | inch 3) | P6 | 140 | 100.4 | 84.58 | -38.00 | 18.29 |
| Oil | N3S | 100% | 0.870 | 73.5 | 82.01 | inch 2) | P7 | 140 | 101.2 | 88.14 | -38.00 | 18.29 |
| Oil | N4S | 100% | 0.870 | 73.5 | 79.15 | inch 1) | P8 | 140 | 102.4 | 91.70 | -38.00 | 18.29 |
| Oil | 0 | | | 11.2 | 48.01 | | 0 | | | | | |
| Oil | 0 | | | 381.2 | 76.08 | Forces | 0 | | 1727.2 | 57.85 | 1.54 | 18.29 |
| Item | ID | % | Density | Weight | LCG | Item | ID | % | Weight | LCG | TCG | VCG |
| Oil Storage Tank Port | N1P | 0% | 0.900 | 0.0 | 84.85 | Oil Storage Tank Port | TT-01 | 99% | 8.0 | 63.51 | 9.85 | 37.88 |
| Oil Storage Tank Stbd | N1S | 0% | 0.900 | 0.0 | 84.85 | Oil Storage Tank Stbd | TT-02 | 99% | 8.0 | 49.26 | 9.85 | 37.88 |
| Oil | N1P | 50% | 1.000 | 9.6 | 80.72 | Oil | TT-03 | 25% | 10.6 | 88.40 | -31.10 | 37.88 |
| Oil | N1S | 50% | 1.000 | 9.6 | 80.72 | Oil | TT-04 | 30% | 9.3 | 81.40 | -32.18 | 37.88 |
| Compressors LO Storage | T65101 | 100% | 0.900 | 0.8 | 78.47 | Compressors LO Storage | TT-05 | 20% | 19.9 | 85.97 | -32.86 | 37.58 |
| Oil Storage Tank Port | T65105 | 100% | 0.900 | 0.3 | 78.17 | Oil Storage Tank Port | TT-06 | 60% | 30.9 | 88.61 | 24.15 | 37.58 |
| Oil Storage Tank Stbd | T65106 | 100% | 0.900 | 0.3 | 34.65 | Oil Storage Tank Stbd | TT-07 | 60% | 31.4 | 80.51 | 24.00 | 37.58 |
| Oil Storage Tank Port | T65107 | 100% | 0.900 | 0.3 | 23.33 | Oil Storage Tank Port | TT-08 | 5% | 4.1 | 82.90 | 31.44 | 37.88 |
| Oil Storage Tank Stbd | T65108 | 100% | 0.900 | 0.3 | 91.04 | Oil Storage Tank Stbd | TT-09 | 5% | 3.0 | 69.19 | -5.33 | 37.88 |
| Oil Storage Tank Port | T65109 | 100% | 0.900 | 0.5 | 48.60 | Oil Storage Tank Port | TT-10 | 50% | 16.3 | 75.27 | -8.16 | 37.78 |
| Oil Storage Tank Stbd | T65110 | 100% | 0.900 | 0.6 | 35.87 | Oil Storage Tank Stbd | TT-11 | 30% | 13.1 | 75.27 | -1.02 | 37.78 |
| Oil Storage Tank Port | T65111 | 100% | 0.900 | 0.8 | 35.87 | Oil Storage Tank Port | TT-12 | 20% | 6.2 | 75.37 | 4.83 | 37.68 |
| Oil Storage Tank Stbd | UQ-122308 | 100% | 0.900 | 15.0 | 89.67 | Oil Storage Tank Stbd | TT-13 | 10% | 0.6 | 61.89 | -2.75 | 37.58 |
| Oil Storage Tank Port | UQ-122306 | 100% | 0.900 | 15.0 | 89.68 | Oil Storage Tank Port | TT-14 | 10% | 2.0 | 37.67 | 22.62 | 37.58 |
| Oil Storage Tank Stbd | UQ-122304 | 100% | 0.900 | 15.0 | 89.71 | Oil Storage Tank Stbd | TT-15 | 10% | 6.1 | 73.19 | 23.30 | 37.58 |
| Oil | 0 | | | 68.2 | 84.90 | Oil | 0 | | 169.3 | 78.84 | 4.33 | 37.69 |
| Item | ID | % | Density | Weight | LCG | Item | ID | % | Weight | LCG | TCG | VCG |
| Oil Storage Tank Port | P | 50% | 1.000 | 2.6 | 78.49 | Oil Storage Tank Port | MD-01 | 20% | 5.6 | 65.89 | 8.51 | 43.87 |
| Oil Storage Tank Stbd | S | 50% | 1.000 | 2.6 | 78.49 | Oil Storage Tank Stbd | MD-02 | 35% | 9.7 | 48.89 | 8.51 | 43.87 |
| Oil Storage Tank Port | P | 50% | 1.000 | 1.4 | 77.13 | Oil Storage Tank Port | MD-03 | 60% | 27.6 | 48.89 | 8.51 | 43.87 |
| Oil Storage Tank Stbd | S | 50% | 1.000 | 1.4 | 77.13 | Oil Storage Tank Stbd | 0 | | 42.9 | 51.10 | 8.51 | 43.87 |
| Oil Storage Tank Port | C-51001 | 100% | 1.000 | 37.9 | 85.08 | Oil Storage Tank Port | 0 | | 42.9 | 51.10 | 8.51 | 43.87 |
| Oil Storage Tank Stbd | C-52001 | 100% | 1.000 | 37.9 | 85.08 | Oil Storage Tank Stbd | 0 | | 42.9 | 51.10 | 8.51 | 43.87 |
| Oil Storage Tank Port | GE-514001 | 100% | 0.870 | 1.0 | 54.39 | Oil Storage Tank Port | 0 | | 42.9 | 51.10 | 8.51 | 43.87 |
| Oil Storage Tank Stbd | N1P | 100% | 1.000 | 13.8 | 79.72 | Oil Storage Tank Stbd | 0 | | 42.9 | 51.10 | 8.51 | 43.87 |
| Oil Storage Tank Port | N1S | 100% | 1.000 | 13.8 | 79.72 | Oil Storage Tank Port | 0 | | 42.9 | 51.10 | 8.51 | 43.87 |
| Oil | 0 | | | 112.5 | 82.99 | Oil | 0 | | 169.3 | 78.84 | 4.33 | 37.69 |
| Item | ID | % | Density | Weight | LCG | Item | ID | % | Weight | LCG | TCG | VCG |
| Oil Storage Tank Port | T05001A | 0% | 1.316 | 0.0 | 25.00 | Oil Storage Tank Port | LD-01 | 40% | 30.4 | 37.14 | 10.07 | 43.00 |
| Oil Storage Tank Stbd | T05001B | 0% | 1.316 | 0.0 | 28.15 | Oil Storage Tank Stbd | LD-02 | 40% | 30.0 | 38.55 | -3.52 | 43.00 |
| Oil Storage Tank Port | T05001A | 0% | 1.316 | 0.0 | 28.15 | Oil Storage Tank Port | LD-03 | 40% | 21.3 | 39.27 | -11.28 | 43.00 |
| Oil Storage Tank Stbd | T05001B | 0% | 1.316 | 0.0 | 25.00 | Oil Storage Tank Stbd | LD-04 | 50% | 29.6 | 95.42 | 0.43 | 43.00 |
| Oil Storage Tank Port | A58001 | 100% | 1.000 | 7.9 | 34.55 | Oil Storage Tank Port | LD-05 | 50% | 28.3 | 95.44 | 15.43 | 43.00 |
| Oil Storage Tank Stbd | A58002 | 100% | 1.000 | 0.1 | 25.91 | Oil Storage Tank Stbd | LD-06 | 50% | 31.9 | 95.44 | 30.80 | 43.00 |
| Oil Storage Tank Port | T59305 | 100% | 0.870 | 0.2 | 21.66 | Oil Storage Tank Port | LD-07 | 0% | 0.0 | 73.34 | -5.46 | 43.00 |
| Oil Storage Tank Stbd | T55101 | 100% | 1.000 | 2.0 | 63.02 | Oil Storage Tank Stbd | LD-08 | 0% | 0.0 | 73.34 | 9.54 | 43.00 |
| Oil Storage Tank Port | T55102 | 100% | 1.000 | 0.5 | 64.97 | Oil Storage Tank Port | LD-09 | 0% | 0.0 | 73.34 | 24.54 | 43.00 |
| Oil Storage Tank Stbd | V-66201/V-66202 | 100% | 0.900 | 1.4 | 80.77 | Oil Storage Tank Stbd | LD-10 | 0% | 0.0 | 106.05 | -19.00 | 36.58 |
| Oil Storage Tank Port | TQ-123301 | 60% | 1.080 | 12.1 | 55.23 | Oil Storage Tank Port | LD-11 | 60% | 127.2 | 30.37 | 1.29 | 43.00 |
| Oil Storage Tank Stbd | V-533605 | 50% | 1.000 | 8.0 | 76.22 | Oil Storage Tank Stbd | 0 | | 298.7 | 52.07 | 5.21 | 43.00 |
| Oil | 0 | | | 32.1 | 56.82 | Oil | 0 | | 14.5 | 0.00 | 0.00 | 0.00 |

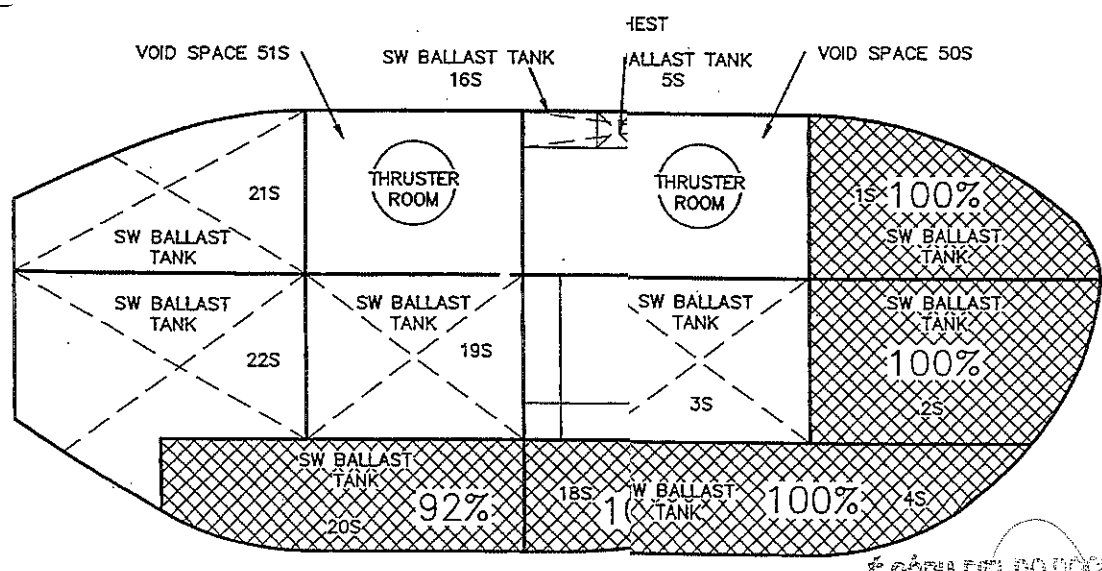
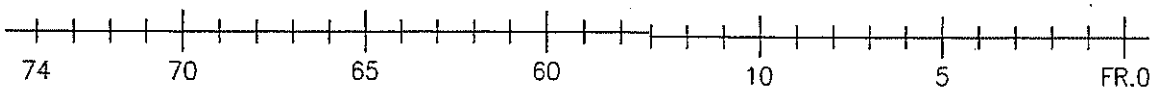
are as follows: Weight - metric tonnes, density - metric tonnes per cubic metre

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FWD



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A
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7.13 MANUAL CALCULATION OF DISPLACEMENT, TRIM AND STABILITY

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CONTENTS

1. INTRODUCTION
2. REFERENCES
3. DEFINITION OF TERMS
4. DETERMINATION OF DISPLACEMENT
5. TRIM AND STABILITY CALCULATION

Appendix A Displacement Calculation

Appendix B Example of Stability Calculation

Appendix C Blank Displacement Trim & Stability Calculation Form

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1. INTRODUCTION

It is a requirement that an alternative method of determining the displacement, trim and stability of the unit be available to the operating personnel on board the unit.

2. REFERENCES

| No | Title | Rev | Document No. |
|----|--|-----|--------------------------------|
| 1. | RINa – Rules for the construction and classification of MODU's | | Effective from January 1997 |
| 2. | Principles of Naval Architecture | | SNAME |
| 3. | Deadweight Survey & Inclining Test | O | RL-3010.38-1320-974-NBD-946 |
| 4. | Sounding Tables | O | RL-3010.38-1320-941-NBD-658-01 |
| 5. | Stability Analysis | B | RL-3010.38-1320-960-NBD-908 |
| 6. | Operations Manuals Volumes 1 thru 7 | | MA-3010.38-1320-915-NBD-909 |
| 7. | Capacity Tables (drawings 1 thru 13) | | DE-3010.38-1320-962-NBD-367 |

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3. TERMINOLOGY

All units shall be SI

Tonnes refers to metric tons

USK – Underside of Keel

Draft (m) – Draft above USK

Displacement (Tonnes) – Displacement of unit based upon sea water density =1.025 (Tonnes/cu.m)

Fpp – Forward Perpendicular located at Frame 0

App – Aft Perpendicular located at Frame 74

CL – centreline (fore-aft)

LCB (m) – Longitudinal Centre of Buoyancy measured from the Fpp

TCB (m) – Transverse Centre of Buoyancy from centreline, +ve to starboard

VCB (m) – Vertical Centre of Buoyancy from USK

LCF (m) – Longitudinal Centre of flotation from Fpp

TCF (m) – Transverse Centre of Flotation from Centreline, +ve starboard

KM_L (m) – Longitudinal Metacentric Height above USK

KM_T (m) – Transverse Metacentric Height above USK

TPC (T/cm) – Change of displacement/change of draft

MCTC (T-m/cm) – Moment to change trim by one centimetre

MCHC (T-m/cm) – Moment to change Heel by one centimetre

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4. DETERMINATION OF DISPLACEMENT

Displacement consists of the following items:

1. Lightship weight with liquids in system is defined in the Deadweight Survey and Inclining Test Report (ref. 3).

| | |
|----------------|----------------|
| Lightship | 31164.5 Tonnes |
| LCG (Fr. Fpp) | 60.62 Metres |
| TCG (+ve stbd) | -0.30 Metres |
| VCG (Fr. USK) | 29.67 Metres |

2. Alterations to lightship weight are recorded in the lightship modification form in Volume 2 of the Operations Manual (ref. 6.)

3. Deadweight includes:

- Consumables (fresh water, fuel oil, lube oil, diesel etc)
- Crew, provisions & stores
- Deck loads (laydown areas, helicopter, crane hookloads etc)
- Process & production loads
- Riser loads
- Seawater ballast
- Vertical chain tensions, chain stored onboard and anchors
- Marine growth

The displacement should be calculated using the following method and cross checked with the draft mark readings.

Displacement From Listed Weights

The displacement can be calculated from the capacity tables (ref. 7). The displacement should be the same as that calculated from the draft readings. The tables are shown in Appendix A.

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Procedure:

1. Determine the weight of all items onboard
2. Define the centre of gravity co-ordinate system as:
 - VCG = vertical centre of gravity from USK
 - LCG = Longitudinal centre of gravity from Frame 0
 - TCG = transverse centre of gravity from CL (+ve to stbd)
3. Sum all weights, calculate moments and calculate combined centre of gravity.
4. Use calculated displacement to extract draft and hydrostatic data from hydrostatic tables (ref. 5).

Displacement From Draft Mark Readings

This procedure is based on draft readings and for detailed instructions the user should refer to Appendix B. This is useful for cross checking the calculated displacement.

Procedure:

1. Read draft marks from scales
2. Calculate the average values
3. Calculate the drafts at the perpendiculars
4. Calculate the mean draft, heel & trim
5. Determine the displacement by interrogating the hydrostatic tables (ref. 5)

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5. TRIM AND STABILITY CALCULATION

Once the Displacement and Centre of Gravity are known the trim and heel can be calculated from the difference between the centre of gravity and the centre of buoyancy

$$\text{Trim (m)} = \frac{(LCB - LCG)}{GM_L \times LBP}$$

$$\text{Heel (m)} = \frac{(TCB - TCG)}{GM_T \times B}$$

With the heel and trim known the drafts at any point around the unit can be checked. When the unit has trim it may be necessary to calculate the layer correction for the Unit. The layer correction represents the additional displacement caused by the trim of the unit and is calculated by the following equation.

$$\text{Layer Correction, } t \text{ (m)} = \frac{LCF}{LBP * \text{Trim}}$$

This layer correction should be added to draft prior to determining the displacement from the hydrostatic curves. Alternatively the layer correction can be calculated as a function of the displacement by the following equation

$$\text{Layer Correction, } t \text{ (tonnes)} = \frac{LCF}{LBP * \text{Trim}} * TPC * 100$$

Once the displacement and centre of gravity are known the VCG must be corrected for free surface effects. From the tank tables the free surface effects for all tanks can be extracted as a function of Inertia, summed and divided by the volume displaced of the unit to give a free surface correction value.

$$f_{sc} = \frac{\sum I^4}{\nabla}$$

Two free surface correction values are calculated, one for the transverse free surface and one for the longitudinal. The VCG can then be corrected for the free surface effect.

$$VCG_{trans} = VCG + f_{sc_{trans}}$$

$$VCG_{long} = VCG + f_{sc_{long}}$$

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From these values the GM values can be calculated using the KM_L & KM_T values extracted from the hydrostatic tables.

$$GM_{T_{fluid}} = KM_T - (VCG + fsc_{trans})$$

$$GM_{L_{fluid}} = KM_L - (VCG + fsc_{long})$$

From the above values the KG can be calculated as the maximum of VCG_{trans} & VCG_{long} and compared against the allowable KG curve. The VCG margin can be calculated as:

$$VCG \text{ margin} = \text{Max Allow VCG} - KG$$

The VCG Margin will be positive if the unit meets all the stability criteria.

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Appendix A

Determination of Displacement, Trim & Stability

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Determination of Deadweight Loads and Unit Displacement

Displacement, Trim and Stability

103

| Sea Water Ballast | ID | Volume
(m3) | Density
(MT/m3) | Weight
(M.T) | LCG
(m) | TCG
(m) | VCG
(m) | FSCT | FSCL |
|-------------------|-----|----------------|--------------------|-----------------|------------|------------|------------|------|------|
| SW Ballast | 1P | | | | | | | | |
| SW Ballast | 1S | | | | | | | | |
| SW Ballast | 2P | | | | | | | | |
| SW Ballast | 2S | | | | | | | | |
| SW Ballast | 3P | | | | | | | | |
| SW Ballast | 3S | | | | | | | | |
| SW Ballast | 4P | | | | | | | | |
| SW Ballast | 4S | | | | | | | | |
| SW Ballast | 5P | | | | | | | | |
| SW Ballast | 5S | | | | | | | | |
| SW Ballast | 6P | | | | | | | | |
| SW Ballast | 6S | | | | | | | | |
| SW Ballast | 7P | | | | | | | | |
| SW Ballast | 7S | | | | | | | | |
| SW Ballast | 11P | | | | | | | | |
| SW Ballast | 11S | | | | | | | | |
| SW Ballast | 13P | | | | | | | | |
| SW Ballast | 13S | | | | | | | | |
| SW Ballast | 16P | | | | | | | | |
| SW Ballast | 16S | | | | | | | | |
| SW Ballast | 17P | | | | | | | | |
| SW Ballast | 17S | | | | | | | | |
| SW Ballast | 18P | | | | | | | | |
| SW Ballast | 18S | | | | | | | | |
| SW Ballast | 19P | | | | | | | | |
| SW Ballast | 19S | | | | | | | | |
| SW Ballast | 20P | | | | | | | | |
| SW Ballast | 20S | | | | | | | | |
| SW Ballast | 21P | | | | | | | | |
| SW Ballast | 21S | | | | | | | | |
| SW Ballast | 22P | | | | | | | | |
| SW Ballast | 22S | | | | | | | | |
| SW Ballast | 23P | | | | | | | | |
| SW Ballast | 23S | | | | | | | | |
| SW Ballast | 24P | | | | | | | | |
| SW Ballast | 24S | | | | | | | | |
| SW Ballast | 25P | | | | | | | | |
| SW Ballast | 25S | | | | | | | | |
| SW Ballast | 26P | | | | | | | | |
| SW Ballast | 26S | | | | | | | | |
| Chain Locker | 1P | | | | | | | | |
| Chain Locker | 2P | | | | | | | | |
| Chain Locker | 3S | | | | | | | | |
| Chain Locker | 4S | | | | | | | | |
| Chain Locker | 5P | | | | | | | | |
| Chain Locker | 6P | | | | | | | | |
| Chain Locker | 7S | | | | | | | | |
| Chain Locker | 8S | | | | | | | | |
| W Ballast Total | | | | | | | | | |

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Determination of Deadweight Loads and Unit Displacement

| Drill Water Tanks (Process FW) | ID | Volume (m3) | Density (MT/m3) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|--------------------------------|-----|-------------|-----------------|--------------|---------|---------|---------|------|------|
| Drill Water Tanks | 8p | | | | | | | | |
| Drill Water Tanks | 8S | | | | | | | | |
| Drill Water Tanks | 9P | | | | | | | | |
| Drill Water Tanks | 9S | | | | | | | | |
| Drill Water Tanks | 14P | | | | | | | | |
| Drill Water Tanks | 14S | | | | | | | | |
| Drill Water Tanks | 15P | | | | | | | | |
| Drill Water Tanks | 15S | | | | | | | | |
| Drill Water Tanks (Process FW) | | | | | | | | | |

| Potable Water | ID | Volume (m3) | Density (MT/m3) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|------------------|----|-------------|-----------------|--------------|---------|---------|---------|------|------|
| Pot Water Tk | 1P | | | | | | | | |
| Pot Water Tk | 1S | | | | | | | | |
| Pot Water Day Tk | | | | | | | | | |
| Potable Water | | | | | | | | | |

| Fuel Oil | ID | Volume (m3) | Density (MT/m3) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|-------------|-----|-------------|-----------------|--------------|---------|---------|---------|------|------|
| FO Tank | 10P | | | | | | | | |
| FO Tank | 10S | | | | | | | | |
| FO Tank | 12P | | | | | | | | |
| FO Tank | 12S | | | | | | | | |
| FO Overflow | P | | | | | | | | |
| FO Overflow | S | | | | | | | | |
| Fuel Oil | | | | | | | | | |

| Diesel Oil | ID | Volume (m3) | Density (MT/m3) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|------------|-----|-------------|-----------------|--------------|---------|---------|---------|------|------|
| DO Sludge | N1P | | | | | | | | |
| DO Sludge | N1S | | | | | | | | |
| DO Settle | N1P | | | | | | | | |
| DO Day Tk | N2P | | | | | | | | |
| DO Day Tk | N3S | | | | | | | | |
| DO Settl | N4S | | | | | | | | |
| DO Service | | | | | | | | | |
| Diesel Oil | | | | | | | | | |

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10/09/2010
10/09/2010

Determination of Deadweight Loads and Unit Displacement

1100

| Lub Oils | ID | Volume
(m3) | Density
(MT/m3) | Weight
(M.T) | LCG
(m) | TCG
(m) | VCG
(m) | FSCT | FSCL |
|------------------------------|-----------|----------------|--------------------|-----------------|------------|------------|------------|------|------|
| | | | | | | | | | |
| Drains Storage Tank Port | N1P | | | | | | | | |
| Drains Storage Tank Stbd | N1S | | | | | | | | |
| Waste Oil | N1P | | | | | | | | |
| Waste Oil | N1S | | | | | | | | |
| Air Compressors LO Storage | T65101 | | | | | | | | |
| Mooring Winch LO Storage | T65105 | | | | | | | | |
| Mooring Winch LO Storage | T65106 | | | | | | | | |
| Mooring Winch LO Storage | T65107 | | | | | | | | |
| Mooring Winch LO Storage | T65108 | | | | | | | | |
| Em. Gen. LO Storage | T65109 | | | | | | | | |
| WI Room LO Storage | T65110 | | | | | | | | |
| WI Room LO Storage | T65111 | | | | | | | | |
| Turbine Lube Oil Console 'C' | UQ-122308 | | | | | | | | |
| Turbine Lube Oil Console 'B' | UQ-122306 | | | | | | | | |
| Turbine Lube Oil Console 'A' | UQ-122304 | | | | | | | | |
| | | | | | | | | | |
| Lub Oils | | | | | | | | | |

| Miscellaneous Tanks | ID | Volume
(m3) | Density
(MT/m3) | Weight
(M.T) | LCG
(m) | TCG
(m) | VCG
(m) | FSCT | FSCL |
|---------------------------|-----------|----------------|--------------------|-----------------|------------|------------|------------|------|------|
| | | | | | | | | | |
| Bilge Holding Tank | P | | | | | | | | |
| Bilge Holding Tank | S | | | | | | | | |
| W.I.L ring Drain Tank | P | | | | | | | | |
| W.I.L ring Drain Tank | S | | | | | | | | |
| Deaerator Tower (Port) | C-51001 | | | | | | | | |
| Deaerator Tower (Starb) | C-52001 | | | | | | | | |
| Auxiliary Generator DO | GE-514001 | | | | | | | | |
| Aft Column Separator Tank | N1P | | | | | | | | |
| Aft Column Separator Tank | N1S | | | | | | | | |
| | | | | | | | | | |
| Miscellaneous Tanks | | | | | | | | | |

| Non Structural Tanks | ID | Volume
(m3) | Density
(MT/m3) | Weight
(M.T) | LCG
(m) | TCG
(m) | VCG
(m) | FSCT | FSCL |
|-------------------------|-----------------|----------------|--------------------|-----------------|------------|------------|------------|------|------|
| | | | | | | | | | |
| Fwd dmn p-tk | T05001A | | | | | | | | |
| Fwd dmn p-tk | T05001B | | | | | | | | |
| Fwd dmn p-tk | T05001A | | | | | | | | |
| Fwd dmn p-tk | T05001B | | | | | | | | |
| Helifuel Refuel | A58001 | | | | | | | | |
| Helifuel Disp | A58002 | | | | | | | | |
| Incinerator DO Day Tank | T59305 | | | | | | | | |
| FW Chem Dosing Tank | T55101 | | | | | | | | |
| FW Cooling ExansionTank | T55102 | | | | | | | | |
| City Water Separators | V-66201/V-66202 | | | | | | | | |
| Glycol Sump Tank | TQ-123301 | | | | | | | | |
| Tank Top Sump Tank | V-533605 | | | | | | | | |
| | | | | | | | | | |
| Non Structural Tanks | | | | | | | | | |

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Determination of Deadweight Loads and Unit Displacement

1103

| Crew & Stores @ TT | ID | Area (m2) | Load Cap. (kN/m2) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|--------------------------------|-------|-----------|-------------------|--------------|---------|---------|---------|------|------|
| Pump Store Aft | TT-01 | 6.1 | 13.0 | | | | | | |
| Pump Store Fwd | TT-02 | 6.1 | 13.0 | | | | | | |
| Mech Store 1 | TT-03 | 32.1 | 13.0 | | | | | | |
| Mech Store 2 | TT-04 | 23.4 | 13.0 | | | | | | |
| Mech Workshop | TT-05 | 75.1 | 13.0 | | | | | | |
| Production Warehouse | TT-06 | 38.8 | 13.0 | | | | | | |
| Production Warehouse | TT-07 | 39.5 | 13.0 | | | | | | |
| Store | TT-08 | 61.6 | 13.0 | | | | | | |
| Store | TT-09 | 45.5 | 13.0 | | | | | | |
| Electrical Workshop | TT-10 | 24.6 | 13.0 | | | | | | |
| Electrical Store | TT-11 | 32.8 | 13.0 | | | | | | |
| Hydraulic Workshop | TT-12 | 23.5 | 13.0 | | | | | | |
| Central Caisson Laydown Area | TT-13 | 6.0 | 9.0 | | | | | | |
| Starboard Forward Laydown Area | TT-14 | 21.6 | 9.0 | | | | | | |
| Instrumentation Workshop | TT-15 | 46.3 | 13.0 | | | | | | |
| | | | | | | | | | |
| Crew & Stores @ TT | | | | | | | | | |

| Crew & Stores @ SD | ID | Area (m2) | Load Cap. (kN/m2) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|-------------------------|-------|-----------|-------------------|--------------|---------|---------|---------|------|------|
| Weld Shop | SD-01 | 94.1 | 13.0 | | | | | | |
| Production Warehouse | SD-02 | 39.0 | 13.0 | | | | | | |
| Warehouse | SD-03 | 113.1 | 13.0 | | | | | | |
| Open Store | SD-04 | 81.8 | 13.0 | | | | | | |
| Dry Store 1 | SD-05 | 45.1 | 13.0 | | | | | | |
| Dry Store 2 | SD-06 | 34.6 | 13.0 | | | | | | |
| Chilling Room / Freezer | SD-07 | 46.7 | 13.0 | | | | | | |
| Crew & Effects | | | | | | | | | |
| | | | | | | | | | |
| Crew & Stores @ SD | | | | | | | | | |

| Crew & Stores @ MD | ID | Area (m2) | Load Cap. (kN/m2) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|--------------------------|-------|-----------|-------------------|--------------|---------|---------|---------|------|------|
| Paint Locker | MD-01 | 21.0 | 13 | | | | | | |
| Deck Locker | MD-02 | 21.0 | 13 | | | | | | |
| Marine Equipment Storage | MD-03 | 34.7 | 13 | | | | | | |
| | | | | | | | | | |
| Crew & Stores @ MD | | | | | | | | | |

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Determination of Deadweight Loads and Unit Displacement

| Helicopter & Laydown Areas | ID | Area (m2) | Load Cap. (kN/m2) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|----------------------------|-------|-----------|-------------------|--------------|---------|---------|---------|------|------|
| Helicopter | HD | 623.1 | | | | | | | |
| Tote Tank Laydown | LD-01 | 57.3 | 13.0 | | | | | | |
| Misc Laydown 1 | LD-02 | 56.6 | 13.0 | | | | | | |
| Misc Laydown 2 | LD-03 | 40.2 | 13.0 | | | | | | |
| Compression A Laydown | LD-04 | 44.6 | 13.0 | | | | | | |
| Compression B Laydown | LD-05 | 42.7 | 13.0 | | | | | | |
| Compression C Laydown | LD-06 | 48.1 | 13.0 | | | | | | |
| Turbine A Laydown | LD-07 | 15.0 | 13.0 | | | | | | |
| Turbine B Laydown | LD-08 | 15.0 | 13.0 | | | | | | |
| Turbine C Laydown | LD-09 | 15.0 | 13.0 | | | | | | |
| Pig Launcher Laydown | LD-10 | 50.9 | 13.0 | | | | | | |
| Multipurpose Court | LD-11 | 160.0 | 13.0 | | | | | | |
| Helicopter & Laydown Areas | | | | | | | | | |

| Process Content | ID | Volume (m3) | Density (MT/m3) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|-------------------------------------|---------------|-------------|-----------------|--------------|---------|---------|---------|------|------|
| Oil Separation - Train A | UQ-122301 | | | | | | | | |
| Oil Separation - Train B | UQ-122302 | | | | | | | | |
| Oil Separation - Heating | UQ-122303 | | | | | | | | |
| Production Caisson | TD-533601 | | | | | | | | |
| Turbine Cooling Water | UQ-122308 | | | | | | | | |
| Turbine Cooling Water | UQ-122306 | | | | | | | | |
| Turbine Cooling Water | UQ-122304 | | | | | | | | |
| Gas/Cond. Chem. Inj Pkge | UQ-682503 | | | | | | | | |
| Oil Chemical Injection (Skid 2) | UQ-682501-02 | | | | | | | | |
| Sea Water Chemical Injection | UQ-682502 | | | | | | | | |
| Oil Chemical Injection (Skid 1) | UQ-682501-01 | | | | | | | | |
| Chemical Injtn Package (Water Inj) | A42001 | | | | | | | | |
| Chem Injection Package (Prod) | A42002 | | | | | | | | |
| Heating Med Exp Vessel | V-512501 | | | | | | | | |
| Cooling Med Exp Vessel | V-512401 | | | | | | | | |
| Skim Pile Matrix Separator | V-66212 | | | | | | | | |
| Glycol Regeneration Package | UQ-123302 | | | | | | | | |
| TEG Contactor Towers | UQ-123301 | | | | | | | | |
| Safety Gas KO Drum Package | V-122301 | | | | | | | | |
| Drains Treatment Package | A45001 | | | | | | | | |
| Fuel Gas Treatment Package | UQ-513501 | | | | | | | | |
| LP KO Drum Package + Pumps | UQ-541202 | | | | | | | | |
| Booster Comp Process Pkg | A30003 | | | | | | | | |
| Caisson Pumps Antifouling Pkg | UQ-512101 | | | | | | | | |
| Seawater Supply Pumps contents | B-511102A/B/C | | | | | | | | |
| Water Injection System (inc Piping) | UQ-125101 | | | | | | | | |
| Process Piping & Valves | | | | | | | | | |
| HP Flare KO Drum Skid | A43001 | | | | | | | | |
| Cooling Medium Package | UQ-512401-01 | | | | | | | | |
| Heating Medium Package & Piping | UQ-512501-01 | | | | | | | | |
| Process Gas Module 'C' | UQ-122309 | | | | | | | | |
| Process Gas Module 'B' | UQ-122307 | | | | | | | | |
| Process Gas Module 'A' | UQ-122305 | | | | | | | | |
| Industrial Water System Piping | | | | | | | | | |
| Process Content | | | | | | | | | |

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Determination of Deadweight Loads and Unit Displacement

1102

| Vertical Mooring Forces | ID | Line Tension (M.T) | Top Angle (Deg) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|-------------------------|----|--------------------|-----------------|--------------|---------|---------|---------|------|------|
| Mooring Line (Winch 1) | P8 | | | | | | | | |
| Mooring Line (Winch 2) | P7 | | | | | | | | |
| Mooring Line (Winch 3) | P6 | | | | | | | | |
| Mooring Line (Winch 4) | P5 | | | | | | | | |
| Mooring Line (Winch 5) | P4 | | | | | | | | |
| Mooring Line (Winch 6) | P3 | | | | | | | | |
| Mooring Line (Winch 7) | P2 | | | | | | | | |
| Mooring Line (Winch 8) | P1 | | | | | | | | |
| Mooring Line (Winch 9) | S1 | | | | | | | | |
| Mooring Line (Winch 10) | S2 | | | | | | | | |
| Mooring Line (Winch 11) | S3 | | | | | | | | |
| Mooring Line (Winch 12) | S4 | | | | | | | | |
| Mooring Line (Winch 13) | S5 | | | | | | | | |
| Mooring Line (Winch 14) | S6 | | | | | | | | |
| Mooring Line (Winch 15) | S7 | | | | | | | | |
| Mooring Line (Winch 16) | S8 | | | | | | | | |
| | | | | | | | | | |
| Vertical Mooring Forces | | | | | | | | | |

| Chain Lockers | ID | Chain Onboard (m) | Weight per metre kg/m | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|--------------------------|-----|-------------------|-----------------------|--------------|---------|---------|---------|------|------|
| CL - Port Aft (Winch 1) | 9P | | 180.5 | | | | | | |
| CL - Port Aft (Winch 2) | 1aP | | 180.5 | | | | | | |
| CL - Port Aft (Winch 3) | 5P | | 180.5 | | | | | | |
| CL - Port Aft (Winch 4) | 1bP | | 180.5 | | | | | | |
| CL - Port Fwd (Winch 5) | 2aP | | 180.5 | | | | | | |
| CL - Port Fwd (Winch 6) | 6P | | 180.5 | | | | | | |
| CL - Port Fwd (Winch 7) | 2bP | | 180.5 | | | | | | |
| CL - Port Fwd (Winch 8) | 10P | | 180.5 | | | | | | |
| CL - Stbd Fwd (Winch 9) | 11S | | 180.5 | | | | | | |
| CL - Stbd Fwd (Winch 10) | 3aS | | 180.5 | | | | | | |
| CL - Stbd Fwd (Winch 11) | 7S | | 180.5 | | | | | | |
| CL - Stbd Fwd (Winch 12) | 3bS | | 180.5 | | | | | | |
| CL - Stbd Aft (Winch 13) | 4aS | | 180.5 | | | | | | |
| CL - Stbd Aft (Winch 14) | 8S | | 180.5 | | | | | | |
| CL - Stbd Aft (Winch 15) | 4bS | | 180.5 | | | | | | |
| CL - Stbd Aft (Winch 16) | 12S | | 180.5 | | | | | | |
| | | | | | | | | | |
| Chain Lockers | | | | | | | | | |

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C. 0013

Determination of Deadweight Loads and Unit Displacement

Displacement, Trim and Stability

| Connected Risers | ID | | | Weight
(M.T) | LCG
(m) | TCG
(m) | VCG
(m) | FSCT | FSCL |
|--------------------------------|-------------|--|--|-----------------|------------|------------|------------|------|------|
| P-1-10 | N1,N2,N3 | | | | | | | | |
| P-1-16 | N4,N5,N6 | | | | | | | | |
| P-1-08 | N7,N8,N9 | | | | | | | | |
| FUTURE | N10,N11 | | | | | | | | |
| I-1-01 | E1,E2 | | | | | | | | |
| P-1-09 | E3,E4,E5 | | | | | | | | |
| P-1-13 | E6,E7,E8 | | | | | | | | |
| LOC A | E9,E10,E11 | | | | | | | | |
| P-1-04 | E12,E13,E14 | | | | | | | | |
| I-1-03 | E15,E16 | | | | | | | | |
| I-1-04 | E17,E18 | | | | | | | | |
| P-1-07 | E19,E20,E21 | | | | | | | | |
| P-1-18 | E22,E23,E24 | | | | | | | | |
| P-1-12 | E25,E26,E27 | | | | | | | | |
| P-1-19 | E28,E29,E30 | | | | | | | | |
| P-1-01 | E31,E32,E33 | | | | | | | | |
| I-1-05 | S1,S2 | | | | | | | | |
| P-1-05 | S3,S4,S5 | | | | | | | | |
| P-1-11 | S6,S7,S8 | | | | | | | | |
| P-1-17 | S9,S10,S11 | | | | | | | | |
| P-1-06 (M/Fid) Riser 6" | S12 | | | | | | | | |
| P-1-14 (M/Fid) Riser 6" | S13 | | | | | | | | |
| P-1-03 (M/Fid) Riser 6" | S14 | | | | | | | | |
| Inj. Quim. (M/Fid) Riser UMB6" | S15 | | | | | | | | |
| Service Manifold Riser 4" | S16 | | | | | | | | |
| Control Umb (M/F) Riser UMB12 | S17 | | | | | | | | |
| Gas Lift Riser 6" | S18 | | | | | | | | |
| P-1-20 (M/Fid) Riser 6" | S19 | | | | | | | | |
| P-1-02 (M/Fid) Riser 6" | S20 | | | | | | | | |
| P-1-15 (M/Fid) Riser 6" | S21 | | | | | | | | |
| I-1-02 | S22,S23 | | | | | | | | |
| FUTURE (WI) F1/I1 | S24,S25 | | | | | | | | |
| SPARE (F1 / LOC H)) | S26,S27,S28 | | | | | | | | |
| SPARE (RJS-513) | S29,S30,S31 | | | | | | | | |
| Optical Cable | S32 | | | | | | | | |
| SPARE | W1 | | | | | | | | |
| SCR-GAS Riser 10" RG-02 | RG-2 | | | | | | | | |
| Electr. Cable | W3 | | | | | | | | |
| FUEL GAS - FSO Riser 6" RG-0 | W4 | | | | | | | | |
| OIL C - EXPORT Riser 10" RO-0 | W5 | | | | | | | | |
| OIL B - EXPORT Riser 10" RO-0 | W6 | | | | | | | | |
| SCR - OIL EXP. Riser 10" RO-0 | RO-1 | | | | | | | | |
| Connected Risers | | | | | | | | | |

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Liberação para uso em projeto
Data: 01/08/2011
Assinatura: [illegible]

Determination of Deadweight Loads and Unit Displacement

[illegible]

| Void Spaces | ID | Volume
(m3) | Density
(MT/m3) | Weight
(M.T) | LCG
(m) | TCG
(m) | VCG
(m) | FSCT | FSCL |
|-------------|--------|----------------|--------------------|-----------------|------------|------------|------------|------|------|
| VOID SPACE | N.27P | | | | | | | | |
| VOID SPACE | N.27S | | | | | | | | |
| VOID SPACE | N.28P | | | | | | | | |
| VOID SPACE | N.28S | | | | | | | | |
| VOID SPACE | N.29P | | | | | | | | |
| VOID SPACE | N.29S | | | | | | | | |
| VOID SPACE | N.29aP | | | | | | | | |
| VOID SPACE | N.29aS | | | | | | | | |
| VOID SPACE | N.30P | | | | | | | | |
| VOID SPACE | N.30S | | | | | | | | |
| VOID SPACE | N.30aP | | | | | | | | |
| VOID SPACE | N.30aS | | | | | | | | |
| VOID SPACE | N.31P | | | | | | | | |
| VOID SPACE | N.31S | | | | | | | | |
| VOID SPACE | N.32P1 | | | | | | | | |
| VOID SPACE | N.32S1 | | | | | | | | |
| VOID SPACE | N.32P2 | | | | | | | | |
| VOID SPACE | N.32S2 | | | | | | | | |
| VOID SPACE | N.32P3 | | | | | | | | |
| VOID SPACE | N.32S3 | | | | | | | | |
| VOID SPACE | N.33P1 | | | | | | | | |
| VOID SPACE | N.33S1 | | | | | | | | |
| VOID SPACE | N.33P2 | | | | | | | | |
| VOID SPACE | N.33S2 | | | | | | | | |
| VOID SPACE | N.34 | | | | | | | | |
| VOID SPACE | N.35 | | | | | | | | |
| VOID SPACE | N.36 | | | | | | | | |
| VOID SPACE | N.37P | | | | | | | | |
| VOID SPACE | N.37S | | | | | | | | |
| VOID SPACE | N.38P | | | | | | | | |
| VOID SPACE | N.38S | | | | | | | | |
| VOID SPACE | N.39 | | | | | | | | |
| VOID SPACE | N.40 | | | | | | | | |
| VOID SPACE | N.41 | | | | | | | | |
| VOID SPACE | N.42P | | | | | | | | |
| VOID SPACE | N.42S | | | | | | | | |
| VOID SPACE | N.43 | | | | | | | | |
| VOID SPACE | N.44 | | | | | | | | |
| VOID SPACE | N.45P | | | | | | | | |

~~ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED~~

Determination of Deadweight Loads and Unit Displacement

| Void Spaces | ID | Volume
(m3) | Density
(MT/m3) | Weight
(M.T) | LCG
(m) | TCG
(m) | VCG
(m) | FSCT | FSCL |
|--------------|--------|----------------|--------------------|-----------------|------------|------------|------------|------|------|
| VOID SPACE | N.45S | | | | | | | | |
| VOID SPACE | N.45aP | | | | | | | | |
| VOID SPACE | N.45aS | | | | | | | | |
| VOID SPACE | N.46P | | | | | | | | |
| VOID SPACE | N.46S | | | | | | | | |
| VOID SPACE | N.46aP | | | | | | | | |
| VOID SPACE | N.46aS | | | | | | | | |
| VOID SPACE | N.50P | | | | | | | | |
| VOID SPACE | N.50S | | | | | | | | |
| VOID SPACE | N.51P | | | | | | | | |
| VOID SPACE | N.51S | | | | | | | | |
| VOID SPACE | N.52P | | | | | | | | |
| VOID SPACE | N.52S | | | | | | | | |
| VOID SPACE | N.53P | | | | | | | | |
| VOID SPACE | N.53S | | | | | | | | |
| VOID SPACE | N.54 | | | | | | | | |
| VOID SPACE | N.55 | | | | | | | | |
| VOID SPACE | N.56 | | | | | | | | |
| VOID SPACE | N.57 | | | | | | | | |
| VOID SPACE | N.58S | | | | | | | | |
| VOID SPACE | N.58P | | | | | | | | |
| VOID SPACE | N.59S | | | | | | | | |
| VOID SPACE | N.59P | | | | | | | | |
| VOID SPACE | N.60 | | | | | | | | |
| VOID SPACE | N.61P | | | | | | | | |
| VOID SPACE | N.61S | | | | | | | | |
| VOID SPACE | N.62S | | | | | | | | |
| VOID SPACE | N.62P | | | | | | | | |
| VOID SPACE | N.63S | | | | | | | | |
| VOID SPACE | N.63P | | | | | | | | |
| VOID SPACE | N.64S | | | | | | | | |
| VOID SPACE | N.64P | | | | | | | | |
| VOID SPACE | N.65S | | | | | | | | |
| VOID SPACE | N.65P | | | | | | | | |
| CHAIN LOCKER | 9P | | | | | | | | |
| CHAIN LOCKER | 10P | | | | | | | | |
| CHAIN LOCKER | 11S | | | | | | | | |
| CHAIN LOCKER | 12S | | | | | | | | |
| VOID Spaces | | | | | | | | | |

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Determination of Unit Displacement

| Displacement | Volume
(m3) | Density
(MT/m3) | Weight
(M.T) | LCG
(m) | TCG
(m) | VCG
(m) | FSCT | FSCL |
|--------------------------------|----------------|--------------------|-----------------|------------|------------|------------|------|------|
| Inclined Lightship | - | - | 31164.5 | 60.62 | -0.30 | 29.67 | 0.00 | 0.00 |
| Drill Water Tanks (Process FW) | | | | | | | | |
| Potable Water | | | | | | | | |
| Fuel Oil | | | | | | | | |
| Diesel Oil | | | | | | | | |
| Lub Oils | | | | | | | | |
| Miscellaneous Tanks | | | | | | | | |
| Non Structural Tanks | | | | | | | | |
| Crew & Stores @ TT | | | | | | | | |
| Crew & Stores @ SD | | | | | | | | |
| Crew & Stores @ MD | | | | | | | | |
| Helicopter & Laydown Areas | | | | | | | | |
| Process Content | | | | | | | | |
| Vertical Mooring Forces | | | | | | | | |
| Chain Lockers | | | | | | | | |
| Connected Risers | | | | | | | | |
| Miscellaneous Items | | | | | | | | |
| Void Spaces | | | | | | | | |
| SW Ballast | | | | | | | | |
| | | | | | | | | |
| Displacement | | | | | | | | |

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Determination of Deadweight Loads and Unit Displacement

| Calculation of Loading Condition | | |
|----------------------------------|----------------|--|
| Hydrostatic Data | | Formula & Notes |
| Displacement | (tonnes) _____ | |
| Mean Draft from USK | (m) _____ | T, From Hydrostatics+E7 |
| Foreward Draft at Ponton | (m) _____ | Fore Draft = $T + \text{Trim} * \text{LCF} / \text{LBP}$ |
| Aft Draft at Pontoon | (m) _____ | Aft Draft = $T + \text{Trim} * (\text{LBP} - \text{LCF}) / \text{LBP}$ |
| Trim | (m) _____ | Trim = $(\text{LCB} - \text{LCG}) / (\text{GML} * \text{LBP})$ |
| Trim Angle | (deg) _____ | Trim Angle = $\arctan((\text{LCB} - \text{LCG}) / \text{GML})$ |
| Heel | (m) _____ | Heel = $(\text{TCB} - \text{TCG}) / (\text{GMT} * \text{Breadth})$ |
| Heeling Angle | (deg) _____ | Heel Angle = $\arctan((\text{TCB} - \text{TCG}) / \text{GMT})$ |
| LCB | (m) _____ | From Hydrostatics |
| LCF | (m) _____ | From Hydrostatics |
| Coordinates of COG | | |
| LCG | (m) _____ | From Hydrostatics |
| TCG | (m) _____ | From Hydrostatics |
| VCG | (m) _____ | From Hydrostatics |
| Statcal Stability | | |
| KML | (m) _____ | From Hydrostatics |
| KMT | (m) _____ | From Hydrostatics |
| VCG | (m) _____ | |
| FSC (trans) | (m) _____ | FSC = Total Transverse FS Inertia / ∇ |
| FSC (long) | (m) _____ | FSC = Total Longitudinal FS Inertia / ∇ |
| VCG + FSC(trans) | (m) _____ | |
| VCG + FSC (long) | (m) _____ | |
| GMT | (m) _____ | GMT = KMT - (VCG+FSC(trans)) |
| GML | (m) _____ | GML = KML - (VCG+FSC(long)) |
| VCG Margin | | |
| Max Allowable VCG | (m) _____ | From Max Allowable VCG Curve |
| KG | (m) _____ | Is max FSC VCG value |
| VCG Margin | (m) _____ | VCG Margin = Max Allow VCG - KG |

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Appendix B

Determination of Displacement by Draft Readings

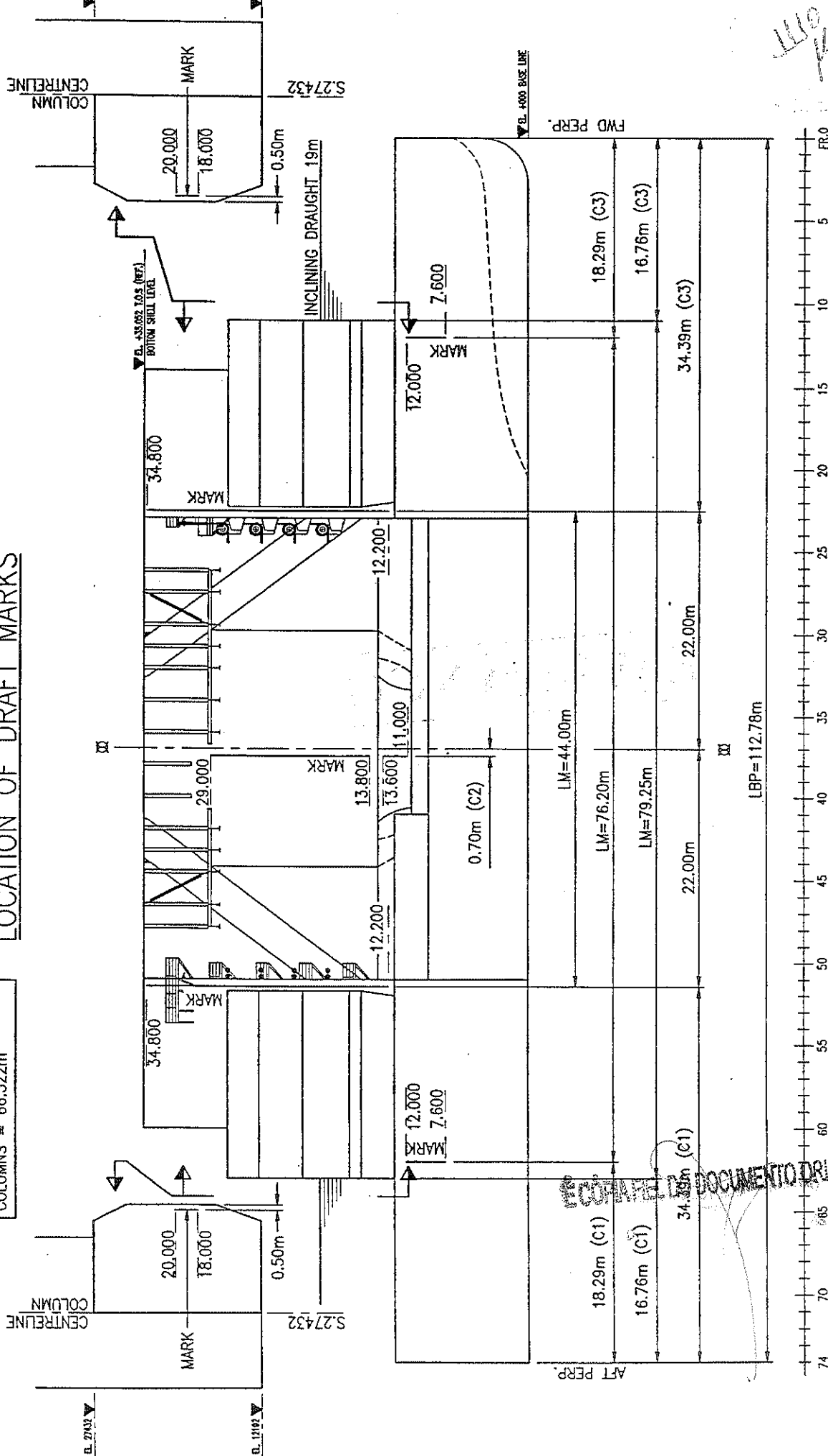
[Faint, illegible text or markings]

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[Faint, illegible text]

TRANSVERSE DISTANCE
BETWEEN DRAFT MARKS
FAIRLEAD BOXES = 73.676m
CAISSON = 21.950m
PONTOONS = 76.900m
COLUMNS = 66.322m

PETROBRAS - 36
LOCATION OF DRAFT MARKS



ELEVATION ON STBD SIDE LKG. INBOARD - PORT SIDE HANDED
(BOAT FENDERS AND RISER PROTECTORS NOT REMOVED FOR CLARITY)

Determination of Displacement from Draft Readings

Average Water Density tonnes/m³
 Length Between Perpendiculars (LBP) = m
 Distance Between Draft Marks (LM) = m (See sketch attached)

DRAFTS FROM U.S.K. (metres)

| | Aft | Midships | Fore |
|-----------|---------------------|---------------------|---------------------|
| Port | | | |
| Starboard | | | |
| Average | | | |
| | (T _{aft}) | (T _{mid}) | (T _{Fwd}) |

Draft calculations on perpendiculars

C1, C2, C3 values *
*(see sketch attached)

$$T_{AP} = T_{aft} + C1 \cdot (T_{aft} - T_{fwd}) / LM \quad T_{AP} = \text{m} \quad C1 = \text{m}$$

$$T_{\otimes} = T_{mid} - C2 \cdot (T_{aft} - T_{fwd}) / LM \quad T_{\otimes} = \text{m} \quad C2 = \text{m}$$

$$T_{FP} = T_{fwd} - C3 \cdot (T_{aft} - T_{fwd}) / LM \quad T_{FP} = \text{m} \quad C3 = \text{m}$$

Average Draft from USK: $T_{MEAN} = (T_{AP} + 4 \cdot T_{\otimes} + T_{FP}) / 6$ m

Draft Correction of SW Density $T'_{MEAN} = T_{MEAN} \cdot (SW_{actual} / 1.025)$ m

Unit's Trim $Trim = T_{fwd} - T_{aft}$ m

Longitudinal Centre of Flotation LCF (from $\otimes$) = m

Layer Correction $t = LCF / LBP \times Trim$ m

Draft at LCF (inc Layer Correction) Draft at LCF (T'_{LCF}) m

Displacement (at Draft T'_{LCF}) Displacement (Δ) = Tonnes

Hydrostatic Properties of Unit

| DRAFT
(m) | DISPL.
(tonnes) | LCB
(m) | TCB
(m) | VCB
(m) | WPA
(m ²) | LCF
(m) | TCF
(m) | KMT
(m) | KML
(m) |
|--------------|--------------------|------------|------------|------------|--------------------------|------------|------------|------------|------------|
| | | | | | | | | | |

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Appendix C

Example of Displacement Trim & Stability Calculation

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Determination of Deadweight Loads and Unit Displacement

| Sea Water Ballast | ID | Volume (m3) | Density (MT/m3) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|-------------------|-----|-------------|-----------------|--------------|---------|---------|---------|------|------|
| SW Ballast | 1P | 886.7 | 1.025 | 899.8 | 9.50 | -24.47 | 6.72 | 0.00 | 0.00 |
| SW Ballast | 1S | 886.7 | 1.025 | 899.8 | 9.50 | 24.47 | 6.72 | 0.00 | 0.00 |
| SW Ballast | 2P | 877.6 | 1.025 | 890.5 | 6.78 | -30.71 | 6.16 | 0.00 | 0.00 |
| SW Ballast | 2S | 877.6 | 1.025 | 890.5 | 6.78 | 30.71 | 6.16 | 0.00 | 0.00 |
| SW Ballast | 3P | 728.7 | 1.025 | 739.4 | 16.71 | -30.88 | 6.10 | 0.00 | 0.00 |
| SW Ballast | 3S | 728.7 | 1.025 | 739.4 | 16.71 | 30.88 | 6.10 | 0.00 | 0.00 |
| SW Ballast | 4P | 798.3 | 1.025 | 810.1 | 13.73 | -36.66 | 6.15 | 0.00 | 0.00 |
| SW Ballast | 4S | 798.3 | 1.025 | 810.1 | 13.73 | 36.66 | 6.15 | 0.00 | 0.00 |
| SW Ballast | 5P | 256.6 | 1.025 | 260.3 | 27.71 | -22.82 | 2.93 | 0.00 | 0.00 |
| SW Ballast | 5S | 256.6 | 1.025 | 260.3 | 27.71 | 22.82 | 2.93 | 0.00 | 0.00 |
| SW Ballast | 6P | 523.9 | 1.025 | 531.6 | 28.19 | -31.74 | 5.21 | 0.00 | 0.00 |
| SW Ballast | 6S | 523.9 | 1.025 | 531.6 | 28.19 | 31.74 | 5.21 | 0.00 | 0.00 |
| SW Ballast | 7P | 555.2 | 1.025 | 563.4 | 26.94 | -36.18 | 6.06 | 0.00 | 0.00 |
| SW Ballast | 7S | 555.2 | 1.025 | 563.4 | 26.94 | 36.18 | 6.06 | 0.00 | 0.00 |
| SW Ballast | 11P | 644.7 | 1.025 | 654.2 | 51.06 | -30.81 | 4.53 | 0.00 | 0.00 |
| SW Ballast | 11S | 644.7 | 1.025 | 654.2 | 51.06 | 30.81 | 4.53 | 0.00 | 0.00 |
| SW Ballast | 13P | 644.7 | 1.025 | 654.2 | 61.72 | -30.81 | 4.53 | 0.00 | 0.00 |
| SW Ballast | 13S | 644.7 | 1.025 | 654.2 | 61.72 | 30.81 | 4.53 | 0.00 | 0.00 |
| SW Ballast | 16P | 249.7 | 1.025 | 2.6 | 85.17 | -22.72 | 0.02 | 0.00 | 0.00 |
| SW Ballast | 16S | 249.7 | 1.025 | 237.5 | 85.17 | 22.72 | 2.61 | 0.00 | 0.00 |
| SW Ballast | 17P | 523.9 | 1.025 | 267.5 | 84.58 | -31.74 | 1.95 | 0.00 | 0.02 |
| SW Ballast | 17S | 523.9 | 1.025 | 5.4 | 84.58 | 31.74 | 0.03 | 0.00 | 0.00 |
| SW Ballast | 18P | 555.2 | 1.025 | 563.4 | 85.84 | -36.18 | 6.06 | 0.00 | 0.00 |
| SW Ballast | 18S | 555.2 | 1.025 | 563.4 | 85.84 | 36.18 | 6.06 | 0.00 | 0.00 |
| SW Ballast | 19P | 728.8 | 1.025 | 739.5 | 96.07 | -30.88 | 6.10 | 0.00 | 0.00 |
| SW Ballast | 19S | 728.8 | 1.025 | 739.5 | 96.07 | 30.88 | 6.10 | 0.00 | 0.00 |
| SW Ballast | 20P | 768.2 | 1.025 | 779.5 | 98.66 | -36.37 | 6.11 | 0.00 | 0.00 |
| SW Ballast | 20S | 768.2 | 1.025 | 779.5 | 98.99 | 36.27 | 6.11 | 0.00 | 0.00 |
| SW Ballast | 21P | 963.7 | 1.025 | 977.9 | 103.87 | -24.48 | 6.63 | 0.00 | 0.00 |
| SW Ballast | 21S | 963.7 | 1.025 | 977.9 | 103.87 | 24.48 | 6.63 | 0.00 | 0.00 |
| SW Ballast | 22P | 1067.3 | 1.025 | 0.0 | 106.75 | -31.15 | 0.00 | 0.00 | 0.00 |
| SW Ballast | 22S | 1067.3 | 1.025 | 0.0 | 106.75 | 31.15 | 0.00 | 0.00 | 0.00 |
| SW Ballast | 23P | 665.6 | 1.025 | 0.0 | 28.02 | -27.55 | 0.00 | 0.00 | 0.00 |
| SW Ballast | 23S | 665.6 | 1.025 | 0.0 | 28.02 | 27.55 | 0.00 | 0.00 | 0.00 |
| SW Ballast | 24P | 980.8 | 1.025 | 0.0 | 28.00 | -26.33 | 0.00 | 0.00 | 0.00 |
| SW Ballast | 24S | 980.8 | 1.025 | 0.0 | 28.00 | 26.33 | 0.00 | 0.00 | 0.00 |
| SW Ballast | 25P | 665.6 | 1.025 | 0.0 | 84.76 | -27.55 | 0.00 | 0.00 | 0.00 |
| SW Ballast | 25S | 665.6 | 1.025 | 0.0 | 84.76 | 27.55 | 0.00 | 0.00 | 0.00 |
| SW Ballast | 26P | 980.8 | 1.025 | 0.0 | 84.77 | -26.33 | 0.00 | 0.00 | 0.00 |
| SW Ballast | 26S | 980.8 | 1.025 | 0.0 | 84.77 | 26.33 | 0.00 | 0.00 | 0.00 |
| Chain Locker | 1P | 363.1 | 1.025 | 0.0 | 84.58 | -30.41 | 0.00 | 0.00 | 0.00 |
| Chain Locker | 2P | 363.1 | 1.025 | 0.0 | 28.20 | -30.41 | 0.00 | 0.00 | 0.00 |
| Chain Locker | 3S | 363.1 | 1.025 | 0.0 | 28.20 | 30.41 | 0.00 | 0.00 | 0.00 |
| Chain Locker | 4S | 363.1 | 1.025 | 0.0 | 84.58 | 30.41 | 0.00 | 0.00 | 0.00 |
| Chain Locker | 5P | 52.2 | 1.025 | 0.0 | 86.47 | -31.12 | 0.00 | 0.00 | 0.00 |
| Chain Locker | 6P | 52.2 | 1.025 | 0.0 | 26.31 | -31.12 | 0.00 | 0.00 | 0.00 |
| Chain Locker | 7S | 52.2 | 1.025 | 0.0 | 26.31 | 31.12 | 0.00 | 0.00 | 0.00 |
| Chain Locker | 8S | 52.2 | 1.025 | 0.0 | 86.47 | 31.12 | 0.00 | 0.00 | 0.00 |
| SW Ballast Total | | | | 18640.5 | 50.30 | -0.16 | 5.68 | 0.00 | 0.03 |

Determination of Deadweight Loads and Unit Displacement

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| Drill Water Tanks (Process FW) | ID | Volume (m3) | Density (MT/m3) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|--------------------------------|-----|-------------|-----------------|--------------|---------|---------|---------|------|------|
| Drill Water Tanks | 8p | 276.5 | 1.000 | 0.0 | 40.25 | -23.31 | 0.00 | 0.00 | 0.00 |
| Drill Water Tanks | 8S | 276.5 | 1.000 | 0.0 | 40.25 | 23.31 | 0.00 | 0.00 | 0.00 |
| Drill Water Tanks | 9P | 248.7 | 1.000 | 0.0 | 40.53 | -31.35 | 0.00 | 0.00 | 0.00 |
| Drill Water Tanks | 9S | 248.7 | 1.000 | 0.0 | 40.53 | 31.35 | 0.00 | 0.00 | 0.00 |
| Drill Water Tanks | 14P | 272.3 | 1.000 | 0.0 | 72.39 | -24.38 | 0.00 | 0.00 | 0.00 |
| Drill Water Tanks | 14S | 272.3 | 1.000 | 0.0 | 72.39 | 24.38 | 0.00 | 0.00 | 0.00 |
| Drill Water Tanks | 15P | 260.3 | 1.000 | 0.0 | 72.34 | -30.45 | 0.00 | 0.00 | 0.00 |
| Drill Water Tanks | 15S | 260.3 | 1.000 | 0.0 | 72.34 | 30.45 | 0.00 | 0.00 | 0.00 |
| | | | | | | | | | |
| Drill Water Tanks (Process FW) | | 2115.5 | | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| Potable Water | ID | Volume (m3) | Density (MT/m3) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|------------------|----|-------------|-----------------|--------------|---------|---------|---------|------|------|
| Pot Water Tk | 1P | 194.0 | 1.000 | 157.1 | 84.58 | -29.99 | 25.33 | 0.00 | 0.01 |
| Pot Water Tk | 1S | 194.0 | 1.000 | 192.0 | 84.58 | 29.99 | 25.88 | 0.00 | 0.00 |
| Pot Water Day Tk | | 15.2 | 1.000 | 15.1 | 78.87 | 4.98 | 38.08 | 0.00 | 0.00 |
| | | | | | | | | | |
| Potable Water | | 403.1 | | 364.2 | 84.34 | 3.08 | 26.15 | 0.00 | 0.01 |

| Fuel Oil | ID | Volume (m3) | Density (MT/m3) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|-------------|-----|-------------|-----------------|--------------|---------|---------|---------|------|------|
| FO Tank | 10P | 611.3 | 0.960 | 0.0 | 51.05 | -23.91 | 0.00 | 0.00 | 0.00 |
| FO Tank | 10S | 611.3 | 0.960 | 0.0 | 51.05 | 23.91 | 0.00 | 0.00 | 0.00 |
| FO Tank | 12P | 614.7 | 0.960 | 0.0 | 61.72 | -23.86 | 0.00 | 0.00 | 0.00 |
| FO Tank | 12S | 614.7 | 0.960 | 0.0 | 61.72 | 23.92 | 0.00 | 0.00 | 0.00 |
| FO Overflow | P | 17.1 | 0.960 | 0.0 | 78.94 | -17.79 | 0.00 | 0.00 | 0.00 |
| FO Overflow | S | 15.8 | 0.960 | 0.0 | 78.87 | 22.86 | 0.00 | 0.00 | 0.00 |
| | | | | | | | | | |
| Fuel Oil | | 2452.0 | | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| Diesel Oil | ID | Volume (m3) | Density (MT/m3) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|------------|-----|-------------|-----------------|--------------|---------|---------|---------|------|------|
| DO Sludge | N1P | 4.1 | 0.870 | 0.0 | 67.61 | -15.62 | 0.00 | 0.00 | 0.00 |
| DO Sludge | N1S | 4.1 | 0.870 | 0.0 | 78.58 | 10.10 | 0.00 | 0.00 | 0.00 |
| DO Settle | N1P | 121.2 | 0.870 | 104.4 | 74.52 | -13.90 | 39.37 | 0.00 | 0.00 |
| DO Day Tk | N2P | 127.2 | 0.870 | 109.6 | 74.60 | -17.44 | 39.35 | 0.00 | 0.00 |
| DO Day Tk | N3S | 84.5 | 0.870 | 59.6 | 82.01 | 15.62 | 37.81 | 0.00 | 0.00 |
| DO Settl | N4S | 84.5 | 0.870 | 72.8 | 79.15 | 15.62 | 38.08 | 0.00 | 0.00 |
| DO Service | | 12.9 | 0.870 | 11.1 | 48.01 | -21.15 | 47.00 | 0.00 | 0.00 |
| | | | | | | | | | |
| Diesel Oil | | 341.2 | | 357.4 | 75.92 | -4.28 | 39.08 | 0.01 | 0.00 |

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Determination of Deadweight Loads and Unit Displacement

| Lub Oils | ID | Volume (m ³) | Density (MT/m ³) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|------------------------------|-----------|--------------------------|------------------------------|--------------|---------|---------|---------|------|------|
| Drains Storage Tank Port | N1P | 451.4 | 0.900 | 0.0 | 84.85 | -22.94 | 0.00 | 0.00 | 0.00 |
| Drains Storage Tank Stbd | N1S | 451.4 | 0.900 | 0.0 | 84.85 | 22.94 | 0.00 | 0.00 | 0.00 |
| Waste Oil | N1P | 19.2 | 1.000 | 0.0 | 80.72 | -24.55 | 0.00 | 0.00 | 0.00 |
| Waste Oil | N1S | 19.2 | 1.000 | 0.0 | 80.72 | 24.55 | 0.00 | 0.00 | 0.00 |
| Air Compressors LO Storage | T65101 | 0.9 | 0.9 | 0.8 | 78.47 | -1.35 | 40.72 | 0.00 | 0.00 |
| Mooring Winch LO Storage | T65105 | 0.3 | 0.9 | 0.3 | 78.17 | -30.43 | 40.77 | 0.00 | 0.00 |
| Mooring Winch LO Storage | T65106 | 0.3 | 0.9 | 0.3 | 34.65 | -30.07 | 40.87 | 0.00 | 0.00 |
| Mooring Winch LO Storage | T65107 | 0.3 | 0.9 | 0.3 | 23.33 | 28.10 | 40.87 | 0.00 | 0.00 |
| Mooring Winch LO Storage | T65108 | 0.3 | 0.9 | 0.3 | 91.04 | 30.07 | 40.96 | 0.00 | 0.00 |
| Em. Gen. LO Storage | T65109 | 0.6 | 0.9 | 0.5 | 48.60 | -22.17 | 45.00 | 0.00 | 0.00 |
| WI Room LO Storage | T65110 | 0.9 | 0.9 | 0.8 | 35.87 | -22.20 | 3.43 | 0.00 | 0.00 |
| WI Room LO Storage | T65111 | 0.9 | 0.9 | 0.8 | 35.87 | 22.20 | 3.44 | 0.00 | 0.00 |
| Turbine Lube Oil Console 'C' | UQ-122308 | 16.7 | 0.9 | 0.0 | 89.67 | 24.55 | 49.23 | 0.00 | 0.00 |
| Turbine Lube Oil Console 'B' | UQ-122306 | 16.7 | 0.9 | 0.0 | 89.68 | 9.55 | 49.24 | 0.00 | 0.00 |
| Turbine Lube Oil Console 'A' | UQ-122304 | 16.7 | 0.9 | 0.0 | 89.71 | -5.45 | 49.25 | 0.00 | 0.00 |
| Lub Oils | | 995.7 | | 4.1 | 51.86 | -3.14 | 26.73 | 0.00 | 0.00 |

| Miscellaneous Tanks | ID | Volume (m ³) | Density (MT/m ³) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|---------------------------|-----------|--------------------------|------------------------------|--------------|---------|---------|---------|------|------|
| Bilge Holding Tank | P | 5.27 | 1.000 | 0.0 | 78.49 | -26.31 | 0.00 | 0.00 | 0.00 |
| Bilge Holding Tank | S | 5.27 | 1.000 | 0.0 | 78.49 | 26.31 | 0.00 | 0.00 | 0.00 |
| W.I.L ring Drain Tank | P | 2.80 | 1.000 | 0.0 | 77.13 | -30.77 | 1.22 | 0.00 | 0.00 |
| W.I.L ring Drain Tank | S | 2.80 | 1.000 | 0.0 | 77.13 | 30.77 | 1.22 | 0.00 | 0.00 |
| Deaerator Tower (Port) | C-51001 | 37.96 | 1.000 | 0.0 | 85.08 | -23.73 | 27.60 | 0.00 | 0.00 |
| Deaerator Tower (Starb) | C-52001 | 37.96 | 1.000 | 0.0 | 85.08 | 23.73 | 27.60 | 0.00 | 0.00 |
| Auxiliary Generator DO | GE-514001 | 1.15 | 0.870 | 1.0 | 54.39 | -12.50 | 53.00 | 0.00 | 0.00 |
| Aft Column Separator Tank | N1P | 13.80 | 1.000 | 0.0 | 79.72 | -26.29 | 35.10 | 0.00 | 0.00 |
| Aft Column Separator Tank | N1S | 13.80 | 1.000 | 0.0 | 79.72 | 26.29 | 35.10 | 0.00 | 0.00 |
| Miscellaneous Tanks | | 120.8 | | 1.0 | 54.39 | -12.50 | 53.00 | 0.00 | 0.00 |

| Non Structural Tanks | ID | Volume (m ³) | Density (MT/m ³) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|--------------------------|-----------------|--------------------------|------------------------------|--------------|---------|---------|---------|------|------|
| Fwd dmn p-tk | T05001A | 83.5 | 1.316 | 0.0 | 25.00 | 26.70 | 27.00 | 0.00 | 0.00 |
| Fwd dmn p-tk | T05001B | 83.5 | 1.316 | 0.0 | 28.15 | 24.23 | 27.00 | 0.00 | 0.00 |
| Fwd dmn p-tk | T05001A | 83.5 | 1.316 | 0.0 | 28.15 | -24.23 | 27.00 | 0.00 | 0.00 |
| Fwd dmn p-tk | T05001B | 83.5 | 1.316 | 0.0 | 25.00 | -26.70 | 27.00 | 0.00 | 0.00 |
| Helifuel Refuel | A58001 | 7.9 | 1.000 | 0.0 | 34.55 | -12.53 | 43.92 | 0.00 | 0.00 |
| Helifuel Disp | A58002 | 0.1 | 1.000 | 0.0 | 25.91 | -19.20 | 45.10 | 0.00 | 0.00 |
| Incinerator DO Day Tank | T59305 | 0.2 | 0.870 | 0.2 | 21.66 | 26.76 | 43.94 | 0.00 | 0.00 |
| FW Chem Dosing Tank | T55101 | 2.0 | 1.000 | 2.0 | 63.02 | -5.30 | 52.91 | 0.00 | 0.00 |
| FW Cooling Exansion Tank | T55102 | 0.5 | 1.000 | 0.5 | 64.97 | -6.20 | 52.91 | 0.00 | 0.00 |
| Oily Water Separators | V-66201/V-66202 | 1.6 | 0.900 | 1.4 | 80.77 | 12.89 | 12.89 | 0.00 | 0.00 |
| Glycol Sump Tank | TQ-123301 | 18.6 | 1.080 | 0.0 | 55.23 | 21.53 | 37.08 | 0.00 | 0.00 |
| Tank Top Sump Tank | V-533605 | 16.0 | 1.000 | 0.0 | 76.22 | 6.44 | 46.47 | 0.00 | 0.00 |
| Non Structural Tanks | | 380.9 | | 4.1 | 67.30 | -2.04 | 44.58 | 0.00 | 0.00 |

Determination of Deadweight Loads and Unit Displacement

| Crew & Stores @ TT | ID | Area (m2) | Load Cap. (kN/m2) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|--------------------------------|-------|-----------|-------------------|--------------|---------|---------|---------|------|------|
| Pump Store Aft | TT-01 | 6.1 | 13.0 | 0.1 | 63.51 | 9.85 | 37.88 | 0.00 | 0.00 |
| Pump Store Fwd | TT-02 | 6.1 | 13.0 | 0.1 | 49.26 | 9.85 | 37.88 | 0.00 | 0.00 |
| Mech Store 1 | TT-03 | 32.1 | 13.0 | 1.7 | 88.40 | -31.10 | 37.88 | 0.00 | 0.00 |
| Mech Store 2 | TT-04 | 23.4 | 13.0 | 1.9 | 81.40 | -32.18 | 37.88 | 0.00 | 0.00 |
| Mech Workshop | TT-05 | 75.1 | 13.0 | 2.0 | 85.97 | -23.86 | 37.58 | 0.00 | 0.00 |
| Production Warehouse | TT-06 | 38.8 | 13.0 | 3.1 | 88.61 | 24.15 | 37.58 | 0.00 | 0.00 |
| Production Warehouse | TT-07 | 39.5 | 13.0 | 1.0 | 80.51 | 24.00 | 37.58 | 0.00 | 0.00 |
| Store | TT-08 | 61.6 | 13.0 | 0.8 | 82.90 | 31.44 | 37.88 | 0.00 | 0.00 |
| Store | TT-09 | 45.5 | 13.0 | 0.6 | 69.19 | -5.33 | 37.88 | 0.00 | 0.00 |
| Electrical Workshop | TT-10 | 24.6 | 13.0 | 0.5 | 75.27 | -8.16 | 37.78 | 0.00 | 0.00 |
| Electrical Store | TT-11 | 32.8 | 13.0 | 0.7 | 75.27 | -1.02 | 37.78 | 0.00 | 0.00 |
| Hydraulic Workshop | TT-12 | 23.5 | 13.0 | 0.0 | 75.37 | 4.83 | 37.68 | 0.00 | 0.00 |
| Central Caisson Laydown Area | TT-13 | 6.0 | 9.0 | 0.0 | 61.89 | -2.75 | 37.58 | 0.00 | 0.00 |
| Starboard Forward Laydown Area | TT-14 | 21.6 | 9.0 | 0.0 | 37.67 | 22.62 | 37.58 | 0.00 | 0.00 |
| Instrumentation Workshop | TT-15 | 46.3 | 13.0 | 0.6 | 73.19 | 23.30 | 37.58 | 0.00 | 0.00 |
| Crew & Stores @ TT | | 482.8 | | 13.0 | 82.95 | -2.06 | 37.72 | 0.00 | 0.00 |

| Crew & Stores @ SD | ID | Area (m2) | Load Cap. (kN/m2) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|-------------------------|-------|-----------|-------------------|--------------|---------|---------|---------|------|------|
| Weld Shop | SD-01 | 94.1 | 13.0 | 1.2 | 84.58 | -24.00 | 40.62 | 0.00 | 0.00 |
| Production Warehouse | SD-02 | 39.0 | 13.0 | 2.6 | 88.60 | 24.00 | 41.12 | 0.00 | 0.00 |
| Warehouse | SD-03 | 113.1 | 13.0 | 6.0 | 85.73 | -15.62 | 41.12 | 0.00 | 0.00 |
| Open Store | SD-04 | 81.8 | 13.0 | 0.0 | 69.43 | -0.23 | 41.02 | 0.00 | 0.00 |
| Dry Store 1 | SD-05 | 45.1 | 13.0 | 2.4 | 40.21 | 8.48 | 40.52 | 0.00 | 0.00 |
| Dry Store 2 | SD-06 | 34.6 | 13.0 | 1.8 | 37.21 | 15.03 | 40.52 | 0.00 | 0.00 |
| Chilling Room / Freezer | SD-07 | 46.7 | 13.0 | 2.5 | 42.47 | 15.03 | 41.02 | 0.00 | 0.00 |
| Crew & Effects | | | | 5.1 | 45.72 | 0.00 | 41.82 | 0.00 | 0.00 |
| Crew & Stores @ SD | | 454.4 | | 21.6 | 62.47 | 1.09 | 41.13 | 0.00 | 0.00 |

| Crew & Stores @ MD | ID | Area (m2) | Load Cap. (kN/m2) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|--------------------------|-------|-----------|-------------------|--------------|---------|---------|---------|------|------|
| Paint Locker | MD-01 | 21.0 | 13 | 2.8 | 65.89 | 8.51 | 43.87 | 0.00 | 0.00 |
| Deck Locker | MD-02 | 21.0 | 13 | 1.4 | 48.89 | 8.51 | 43.87 | 0.00 | 0.00 |
| Marine Equipment Storage | MD-03 | 34.7 | 13 | 2.3 | 48.89 | 8.51 | 43.87 | 0.00 | 0.00 |
| Crew & Stores @ MD | | 76.7 | | 6.5 | 56.20 | 8.51 | 43.87 | 0.00 | 0.00 |

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Determination of Deadweight Loads and Unit Displacement

| Helicopter & Laydown Areas | ID | Area (m2) | Load Cap. (kN/m2) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|----------------------------|-------|-----------|-------------------|--------------|---------|---------|---------|------|------|
| Helicopter | HD | 623.1 | | 0.0 | 21.10 | -35.80 | 48.90 | | |
| Tote Tank Laydown | LD-01 | 57.3 | 13.0 | 0.0 | 37.14 | 10.07 | 43.00 | | |
| Misc Laydown 1 | LD-02 | 56.6 | 13.0 | 0.0 | 38.55 | -3.52 | 43.00 | | |
| Misc Laydown 2 | LD-03 | 40.2 | 13.0 | 0.0 | 39.27 | -11.28 | 43.00 | | |
| Compression A Laydown | LD-04 | 44.6 | 13.0 | 0.0 | 95.42 | 0.43 | 43.00 | | |
| Compression B Laydown | LD-05 | 42.7 | 13.0 | 0.0 | 95.44 | 15.43 | 43.00 | | |
| Compression C Laydown | LD-06 | 48.1 | 13.0 | 0.0 | 95.44 | 30.80 | 43.00 | | |
| Turbine A Laydown | LD-07 | 15.0 | 13.0 | 0.0 | 73.34 | -5.46 | 43.00 | | |
| Turbine B Laydown | LD-08 | 15.0 | 13.0 | 0.0 | 73.34 | 9.54 | 43.00 | | |
| Turbine C Laydown | LD-09 | 15.0 | 13.0 | 0.0 | 73.34 | 24.54 | 43.00 | | |
| Pig Launcher Laydown | LD-10 | 50.9 | 13.0 | 8.1 | 106.05 | -19.00 | 36.58 | | |
| Multipurpose Court | LD-11 | 160.0 | 13.0 | 0.0 | 30.37 | 1.29 | 43.00 | | |
| Helicopter & Laydown Areas | | | | 8.1 | 106.05 | -19.00 | 36.58 | 0.00 | 0.00 |

| Process Content | ID | Volume (m3) | Density (MT/m3) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|-------------------------------------|---------------|-------------|-----------------|--------------|---------|---------|---------|------|------|
| Oil Separation - Train A | UQ-122301 | 550.9 | 0.850 | 0.0 | 92.29 | -28.51 | 47.27 | 0.00 | 0.00 |
| Oil Separation - Train B | UQ-122302 | 550.5 | 0.850 | 0.0 | 92.28 | -18.53 | 47.34 | 0.00 | 0.00 |
| Oil Separation - Heating | UQ-122303 | 92.7 | 0.850 | 0.0 | 77.27 | -20.01 | 47.49 | | |
| Production Caisson | TD-533601 | 52.2 | 0.900 | 0.0 | 64.74 | -16.71 | 19.81 | | |
| Turbine Cooling Water | UQ-122308 | 5.6 | 1.000 | 0.0 | 89.67 | 24.55 | 49.23 | | |
| Turbine Cooling Water | UQ-122306 | 5.6 | 1.000 | 0.0 | 89.68 | 9.55 | 49.24 | | |
| Turbine Cooling Water | UQ-122304 | 5.6 | 1.000 | 0.0 | 89.71 | -5.45 | 49.25 | | |
| Gas/Cond. Chem. Inj Pkge | UQ-682503 | 42.8 | 0.900 | 0.0 | 58.48 | 13.14 | 44.98 | | |
| Oil Chemical Injection (Skid 2) | UQ-682501-02 | 31.5 | 0.900 | 0.0 | 61.79 | 13.04 | 37.74 | | |
| Sea Water Chemical Injection | UQ-682502 | 21.3 | 0.900 | 0.0 | 54.46 | 18.66 | 37.36 | | |
| Oil Chemical Injection (Skid 1) | UQ-682501-01 | 18.3 | 0.900 | 0.0 | 50.68 | 17.60 | 37.52 | | |
| Chemical Injtn Package (Water Inj) | A42001 | 1.9 | 0.900 | 0.0 | 61.56 | 17.80 | 38.33 | | |
| Chem Injection Package (Prod) | A42002 | 1.7 | 0.900 | 0.0 | 55.56 | 13.40 | 38.33 | | |
| Heating Med Exp Vessel | V-512501 | 20.3 | 0.935 | 0.0 | 48.12 | 2.33 | 63.78 | 0.00 | 0.00 |
| Cooling Med Exp Vessel | V-512401 | 6.8 | 1.000 | 0.0 | 48.10 | -3.22 | 63.78 | 0.00 | 0.00 |
| Skim Pile Matrix Separator | V-66212 | 11.8 | 0.900 | 0.0 | 59.51 | -13.30 | 43.92 | | |
| Glycol Regeneration Package | UQ-123302 | 12.4 | 1.080 | 0.0 | 57.13 | 16.93 | 45.38 | | |
| TEG Contactor Towers | UQ-123301 | 7.7 | 1.080 | 0.0 | 57.44 | 12.87 | 48.38 | | |
| Safety Gas KO Drum Package | V-122301 | 14.9 | 0.975 | 0.0 | 62.88 | 30.50 | 45.96 | | |
| Drains Treatment Package | A45001 | 14.4 | 1.000 | 0.0 | 97.69 | 14.72 | 39.08 | | |
| Fuel Gas Treatment Package | UQ-513501 | 9.4 | 1.000 | 0.0 | 97.93 | 23.08 | 38.55 | | |
| LP KO Drum Package + Pumps | UQ-541202 | 9.6 | 0.820 | 0.0 | 63.87 | -16.36 | 44.21 | | |
| Booster Comp Process Pkg | A30003 | 6.4 | 1.000 | 0.0 | 56.94 | 22.68 | 46.10 | | |
| Caisson Pumps Antifouling Pkg | UQ-512101 | 8.0 | 1.025 | 0.0 | 32.98 | 13.20 | 44.42 | | |
| Seawater Supply Pumps contents | B-511102A/B/C | 58.5 | 1.025 | 0.0 | 56.39 | 5.25 | 20.00 | | |
| Water Injection System (inc Piping) | UQ-125101 | 48.1 | 1.025 | 0.0 | 74.40 | 0.00 | 17.67 | | |
| Process Piping & Valves | | 121.3 | 0.860 | 0.0 | 60.46 | -0.54 | 40.07 | | |
| HP Flare KO Drum Skid | A43001 | 10.2 | 0.820 | 0.0 | 59.66 | -21.60 | 44.79 | | |
| Cooling Medium Package | UQ-512401-01 | 26.8 | 1.000 | 0.0 | 26.81 | 17.04 | 48.25 | | |
| Heating Medium Package & Piping | UQ-512501-01 | 44.9 | 0.963 | 0.0 | 31.81 | 23.90 | 46.56 | | |
| Process Gas Module 'C' | UQ-122309 | 12.3 | 0.650 | 0.0 | 79.28 | 31.85 | 48.86 | 0.00 | 0.00 |
| Process Gas Module 'B' | UQ-122307 | 12.3 | 0.650 | 0.0 | 79.28 | 16.85 | 48.86 | 0.00 | 0.00 |
| Process Gas Module 'A' | UQ-122305 | 12.3 | 0.650 | 0.0 | 79.28 | 2.06 | 48.86 | 0.00 | 0.00 |
| Industrial Water System Piping | | 49.1 | 1.000 | 0.0 | 56.39 | 0.00 | 43.00 | | |
| Process Content | | | | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Determination of Deadweight Loads and Unit Displacement

| Vertical Mooring Forces | ID | Line Tension (M.T) | Top Angle (Deg) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|-------------------------|----|--------------------|-----------------|--------------|---------|---------|---------|------|------|
| Mooring Line (Winch 1) | P8 | 3.8 | 90.00 | 3.8 | 91.70 | -38.00 | 18.29 | | |
| Mooring Line (Winch 2) | P7 | 0.0 | 90.00 | 0.0 | 88.14 | -38.00 | 18.29 | | |
| Mooring Line (Winch 3) | P6 | 0.0 | 90.00 | 0.0 | 84.58 | -38.00 | 18.29 | | |
| Mooring Line (Winch 4) | P5 | 0.0 | 90.00 | 0.0 | 81.02 | -38.00 | 18.29 | | |
| Mooring Line (Winch 5) | P4 | 3.8 | 90.00 | 3.8 | 35.31 | -38.00 | 18.29 | | |
| Mooring Line (Winch 6) | P3 | 0.0 | 90.00 | 0.0 | 31.75 | -38.00 | 18.29 | | |
| Mooring Line (Winch 7) | P2 | 0.0 | 90.00 | 0.0 | 28.19 | -38.00 | 18.29 | | |
| Mooring Line (Winch 8) | P1 | 0.0 | 90.00 | 0.0 | 24.63 | -38.00 | 18.29 | | |
| Mooring Line (Winch 9) | S1 | 0.0 | 90.00 | 0.0 | 24.63 | 38.00 | 18.29 | | |
| Mooring Line (Winch 10) | S2 | 0.0 | 90.00 | 0.0 | 28.19 | 38.00 | 18.29 | | |
| Mooring Line (Winch 11) | S3 | 0.0 | 90.00 | 0.0 | 31.75 | 38.00 | 18.29 | | |
| Mooring Line (Winch 12) | S4 | 3.8 | 90.00 | 3.8 | 35.31 | 38.00 | 18.29 | | |
| Mooring Line (Winch 13) | S5 | 0.0 | 90.00 | 0.0 | 81.02 | 38.00 | 18.29 | | |
| Mooring Line (Winch 14) | S6 | 0.0 | 90.00 | 0.0 | 84.58 | 38.00 | 18.29 | | |
| Mooring Line (Winch 15) | S7 | 0.0 | 90.00 | 0.0 | 88.14 | 38.00 | 18.29 | | |
| Mooring Line (Winch 16) | S8 | 3.8 | 90.00 | 3.8 | 91.70 | 38.00 | 18.29 | | |
| | | | | | | | | | |
| Vertical Mooring Forces | | | | 15.1 | 63.51 | 0.00 | 18.29 | 0.00 | 0.00 |

| Chain Lockers | ID | Chain Onboard (m) | Weight per metre kg/m | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|--------------------------|-----|-------------------|-----------------------|--------------|---------|---------|---------|------|------|
| CL - Port Aft (Winch 1) | 9P | 479 | 180.5 | 86.5 | 91.05 | -33.48 | 13.72 | | |
| CL - Port Aft (Winch 2) | 1aP | 0 | 180.5 | 0.0 | 87.52 | -30.50 | 4.60 | | |
| CL - Port Aft (Winch 3) | 5P | 0 | 180.5 | 0.0 | 86.47 | -31.12 | 16.19 | | |
| CL - Port Aft (Winch 4) | 1bP | 0 | 180.5 | 0.0 | 81.65 | -30.50 | 4.60 | | |
| CL - Port Fwd (Winch 5) | 2aP | 479 | 180.5 | 86.5 | 31.13 | -30.50 | 4.60 | | |
| CL - Port Fwd (Winch 6) | 6P | 451 | 180.5 | 81.4 | 26.31 | -31.12 | 16.19 | | |
| CL - Port Fwd (Winch 7) | 2bP | 379 | 180.5 | 68.4 | 25.26 | -30.50 | 4.60 | | |
| CL - Port Fwd (Winch 8) | 10P | 401 | 180.5 | 72.4 | 21.73 | -33.48 | 13.72 | | |
| CL - Stbd Fwd (Winch 9) | 11S | 0 | 180.5 | 0.0 | 21.73 | 33.48 | 13.72 | | |
| CL - Stbd Fwd (Winch 10) | 3aS | 379 | 180.5 | 68.4 | 25.26 | 30.50 | 4.60 | | |
| CL - Stbd Fwd (Winch 11) | 7S | 0 | 180.5 | 0.0 | 26.31 | 31.12 | 16.19 | | |
| CL - Stbd Fwd (Winch 12) | 3bS | 379 | 180.5 | 68.4 | 31.13 | 30.50 | 4.60 | | |
| CL - Stbd Aft (Winch 13) | 4aS | 0 | 180.5 | 0.0 | 81.65 | 30.50 | 4.60 | | |
| CL - Stbd Aft (Winch 14) | 8S | 0 | 180.5 | 0.0 | 86.47 | 31.12 | 16.19 | | |
| CL - Stbd Aft (Winch 15) | 4bS | 0 | 180.5 | 0.0 | 87.52 | 30.50 | 4.60 | | |
| CL - Stbd Aft (Winch 16) | 12S | 479 | 180.5 | 86.5 | 91.05 | 33.48 | 13.72 | | |
| | | | | | | | | | |
| Chain Lockers | | 3426 | | 618.4 | 44.85 | -8.91 | 9.74 | | |

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Determination of Deadweight Loads and Unit Displacement

| Connected Risers | ID | | | Weight
(M.T) | LCG
(m) | TCG
(m) | VCG
(m) | FSCT | FSCL |
|--------------------------------|-------------|--|--|-----------------|------------|------------|------------|------|------|
| P-1-10 | N1,N2,N3 | | | 0.0 | 24.34 | -15.27 | 8.80 | | |
| P-1-16 | N4,N5,N6 | | | 0.0 | 24.34 | -12.27 | 8.80 | | |
| P-1-08 | N7,N8,N9 | | | 0.0 | 24.34 | 14.75 | 8.80 | | |
| FUTURE | N10,N11 | | | 0.0 | 24.34 | 17.37 | 6.50 | | |
| I-1-01 | E1,E2 | | | 0.0 | 41.26 | 18.57 | 6.22 | | |
| P-1-09 | E3,E4,E5 | | | 0.0 | 43.64 | 18.57 | 6.32 | | |
| P-1-13 | E6,E7,E8 | | | 0.0 | 46.64 | 18.57 | 6.32 | | |
| LOC A | E9,E10,E11 | | | 0.0 | 49.64 | 18.57 | 6.32 | | |
| P-1-04 | E12,E13,E14 | | | 0.0 | 52.64 | 18.57 | 6.32 | | |
| I-1-03 | E15,E16 | | | 0.0 | 55.26 | 18.57 | 6.22 | | |
| I-1-04 | E17,E18 | | | 0.0 | 57.26 | 18.57 | 6.22 | | |
| P-1-07 | E19,E20,E21 | | | 0.0 | 59.64 | 18.57 | 6.32 | | |
| P-1-18 | E22,E23,E24 | | | 0.0 | 62.64 | 18.57 | 6.32 | | |
| P-1-12 | E25,E26,E27 | | | 0.0 | 65.64 | 18.57 | 6.32 | | |
| P-1-19 | E28,E29,E30 | | | 0.0 | 68.64 | 18.57 | 6.32 | | |
| P-1-01 | E31,E32,E33 | | | 0.0 | 71.64 | 18.57 | 6.32 | | |
| I-1-05 | S1,S2 | | | 0.0 | 92.44 | 15.13 | 29.25 | | |
| P-1-05 | S3,S4,S5 | | | 0.0 | 92.44 | 12.75 | 29.25 | | |
| P-1-11 | S6,S7,S8 | | | 0.0 | 92.44 | 9.75 | 29.25 | | |
| P-1-17 | S9,S10,S11 | | | 0.0 | 92.44 | 6.75 | 29.25 | | |
| P-1-06 (M/Fld) Riser 6" | S12 | | | 0.0 | 92.44 | 5.00 | 29.25 | | |
| P-1-14 (M/Fld) Riser 6" | S13 | | | 0.0 | 92.44 | 3.50 | 29.25 | | |
| P-1-03 (M/Fld) Riser 6" | S14 | | | 0.0 | 92.44 | 2.50 | 29.25 | | |
| Inj. Quim. (M/Fld) Riser UMB6" | S15 | | | 0.0 | 92.44 | 1.50 | 29.25 | | |
| Service Manifold Riser 4" | S16 | | | 0.0 | 92.44 | 0.50 | 29.25 | | |
| Control Umb (M/F) Riser UMB12" | S17 | | | 0.0 | 92.44 | -0.50 | 29.25 | | |
| Gas Lift Riser 6" | S18 | | | 0.0 | 92.44 | -1.50 | 29.25 | | |
| P-1-20 (M/Fld) Riser 6" | S19 | | | 0.0 | 92.44 | -2.50 | 29.25 | | |
| P-1-02 (M/Fld) Riser 6" | S20 | | | 0.0 | 92.44 | -4.00 | 29.25 | | |
| P-1-15 (M/Fld) Riser 6" | S21 | | | 0.0 | 92.44 | -5.00 | 29.25 | | |
| I-1-02 | S22,S23 | | | 0.0 | 92.44 | -6.87 | 29.25 | | |
| FUTURE (WI) F1/I1 | S24,S25 | | | 0.0 | 92.44 | -8.87 | 29.25 | | |
| SPARE (F1 / LOC H)) | S26,S27,S28 | | | 0.0 | 92.44 | -11.25 | 29.25 | | |
| SPARE (RJS-513) | S29,S30,S31 | | | 0.0 | 92.44 | -14.25 | 29.25 | | |
| Optical Cable | S32 | | | 0.0 | 92.44 | -16.00 | 29.25 | | |
| SPARE | W1 | | | 0.0 | 0.00 | 0.00 | 0.00 | | |
| SCR-GAS Riser 10" RG-02 | RG-2 | | | 0.0 | 71.63 | -36.29 | 6.00 | | |
| Electr. Cable | W3 | | | 0.0 | 62.17 | -18.57 | 6.50 | | |
| FUEL GAS - FSO Riser 6" RG-01 | W4 | | | 0.0 | 61.17 | -18.57 | 6.18 | | |
| OIL C - EXPORT Riser 10" RO-0 | W5 | | | 0.0 | 53.59 | -18.57 | 6.50 | | |
| OIL B - EXPORT Riser 10" RO-0 | W6 | | | 0.0 | 52.29 | -18.57 | 6.50 | | |
| SCR - OIL EXP. Riser 10" RO-0 | RO-1 | | | 0.0 | 48.77 | -36.29 | 6.00 | | |
| Connected Risers | | | | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Determination of Deadweight Loads and Unit Displacement

| Miscellaneous Items | ID | | | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|-----------------------------|----|--|--|--------------|---------|---------|---------|------|------|
| Anchors on Racks (4 off) | | | | 72.0 | 63.51 | 0.00 | 12.10 | 0.00 | 0.00 |
| Inclining Weights | | | | 187.0 | 65.43 | 2.12 | 43.86 | 0.00 | 0.00 |
| Inc Weight Cribbing | | | | 42.0 | 60.89 | 2.87 | 42.94 | 0.00 | 0.00 |
| Temporary Stores For Brazil | | | | 67.2 | 54.12 | 21.29 | 26.43 | 0.00 | 0.00 |
| | | | | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Miscellaneous Items | | | | 368.2 | 62.47 | 5.29 | 34.36 | 0.00 | 0.00 |

| Void Spaces | ID | Volume (m3) | Density (MT/m3) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|-------------|--------|-------------|-----------------|--------------|---------|---------|---------|------|------|
| VOID SPACE | N.27P | 0.0 | 1.025 | 0.0 | 33.53 | -21.3 | 5.33 | | |
| VOID SPACE | N.27S | 0.0 | 1.025 | 0.0 | 33.53 | 21.3 | 5.33 | | |
| VOID SPACE | N.28P | 0.0 | 1.025 | 0.0 | 79.25 | -21.3 | 5.33 | | |
| VOID SPACE | N.28S | 0.0 | 1.025 | 0.0 | 79.25 | 21.3 | 5.33 | | |
| VOID SPACE | N.29P | 0.0 | 1.025 | 0.0 | 19.06 | -30.1 | 15.24 | | |
| VOID SPACE | N.29S | 0.0 | 1.025 | 0.0 | 19.06 | 30.1 | 15.24 | | |
| VOID SPACE | N.29aP | 0.0 | 1.025 | 0.0 | 28.2 | -35.7 | 18.36 | | |
| VOID SPACE | N.29aS | 0.0 | 1.025 | 0.0 | 28.2 | 35.7 | 18.36 | | |
| VOID SPACE | N.30P | 0.0 | 1.025 | 0.0 | 93.72 | -30.1 | 15.24 | | |
| VOID SPACE | N.30S | 0.0 | 1.025 | 0.0 | 93.72 | 30.1 | 15.24 | | |
| VOID SPACE | N.30aP | 0.0 | 1.025 | 0.0 | 84.58 | -35.7 | 18.36 | | |
| VOID SPACE | N.30aS | 0.0 | 1.025 | 0.0 | 84.58 | 35.7 | 18.36 | | |
| VOID SPACE | N.31P | 0.0 | 1.025 | 0.0 | 84.58 | -30.0 | 22.10 | | |
| VOID SPACE | N.31S | 0.0 | 1.025 | 0.0 | 84.58 | 30.0 | 22.10 | | |
| VOID SPACE | N.32P1 | 0.0 | 1.025 | 0.0 | 23.75 | -16.8 | 25.15 | | |
| VOID SPACE | N.32S1 | 0.0 | 1.025 | 0.0 | 23.75 | 16.8 | 25.15 | | |
| VOID SPACE | N.32P2 | 0.0 | 1.025 | 0.0 | 32.47 | -23.1 | 25.30 | | |
| VOID SPACE | N.32S2 | 0.0 | 1.025 | 0.0 | 32.47 | 23.1 | 25.30 | | |
| VOID SPACE | N.32P3 | 0.0 | 1.025 | 0.0 | 28.19 | -26.1 | 25.15 | | |
| VOID SPACE | N.32S3 | 0.0 | 1.025 | 0.0 | 28.19 | 26.1 | 25.15 | | |
| VOID SPACE | N.33P1 | 0.0 | 1.025 | 0.0 | 80.29 | -31.4 | 25.15 | | |
| VOID SPACE | N.33S1 | 0.0 | 1.025 | 0.0 | 80.29 | 31.4 | 25.15 | | |
| VOID SPACE | N.33P2 | 0.0 | 1.025 | 0.0 | 88.88 | -31.4 | 25.15 | | |
| VOID SPACE | N.33S2 | 0.0 | 1.025 | 0.0 | 88.88 | 31.4 | 25.15 | | |
| VOID SPACE | N.34 | 0.0 | 1.025 | 0.0 | 50.56 | 0.0 | 12.95 | | |
| VOID SPACE | N.35 | 0.0 | 1.025 | 0.0 | 62.22 | 0.0 | 12.95 | | |
| VOID SPACE | N.36 | 0.0 | 1.025 | 0.0 | 56.39 | -7.5 | 27.43 | | |
| VOID SPACE | N.37P | 0.0 | 1.025 | 0.0 | 48.65 | -9.2 | 38.86 | | |
| VOID SPACE | N.37S | 0.0 | 1.025 | 0.0 | 48.56 | 9.1 | 38.98 | | |
| VOID SPACE | N.38P | 0.0 | 1.025 | 0.0 | 64.13 | -9.2 | 38.86 | | |
| VOID SPACE | N.38S | 0.0 | 1.025 | 0.0 | 64.22 | 9.1 | 38.98 | | |
| VOID SPACE | N.39 | 0.0 | 1.025 | 0.0 | 28.2 | 0.0 | 35.81 | | |
| VOID SPACE | N.40 | 0.0 | 1.025 | 0.0 | 51.56 | -5.1 | 35.81 | | |
| VOID SPACE | N.41 | 0.0 | 1.025 | 0.0 | 56.39 | 24.0 | 35.81 | | |
| VOID SPACE | N.42P | 0.0 | 1.025 | 0.0 | 56.39 | -30.1 | 35.81 | | |
| VOID SPACE | N.42S | 0.0 | 1.025 | 0.0 | 56.39 | 30.1 | 35.81 | | |
| VOID SPACE | N.43 | 0.0 | 1.025 | 0.0 | 80.91 | 2.6 | 35.81 | | |
| VOID SPACE | N.44 | 0.0 | 1.025 | 0.0 | 56.39 | 0.8 | 35.81 | | |
| VOID SPACE | N.45P | 0.0 | 1.025 | 0.0 | 93.72 | -22.9 | 30.10 | | |

Determination of Deadweight Loads and Unit Displacement

| Void Spaces | ID | Volume (m3) | Density (MT/m3) | Weight (M.T) | LCG (m) | TCG (m) | VCG (m) | FSCT | FSCL |
|--------------|--------|-------------|-----------------|--------------|---------|---------|---------|------|------|
| VOID SPACE | N.45S | 0.0 | 1.025 | 0.0 | 93.72 | 22.9 | 30.10 | | |
| VOID SPACE | N.45aP | 0.0 | 1.025 | 0.0 | 93.72 | -35.0 | 22.71 | | |
| VOID SPACE | N.45aS | 0.0 | 1.025 | 0.0 | 93.72 | 35.0 | 22.71 | | |
| VOID SPACE | N.46P | 0.0 | 1.025 | 0.0 | 19.06 | -22.9 | 30.10 | | |
| VOID SPACE | N.46S | 0.0 | 1.025 | 0.0 | 19.06 | 22.9 | 30.10 | | |
| VOID SPACE | N.46aP | 0.0 | 1.025 | 0.0 | 19.06 | -35.0 | 22.71 | | |
| VOID SPACE | N.46aS | 0.0 | 1.025 | 0.0 | 19.06 | 35.0 | 22.71 | | |
| VOID SPACE | N.50P | 0.0 | 1.025 | 0.0 | 16.77 | -24.8 | 0.76 | | |
| VOID SPACE | N.50S | 0.0 | 1.025 | 0.0 | 16.77 | 24.8 | 0.76 | | |
| VOID SPACE | N.51P | 0.0 | 1.025 | 0.0 | 96.01 | -24.8 | 0.76 | | |
| VOID SPACE | N.51S | 0.0 | 1.025 | 0.0 | 96.01 | 24.8 | 0.76 | | |
| VOID SPACE | N.52P | 0.0 | 1.025 | 0.0 | 71.57 | -15.0 | 12.19 | | |
| VOID SPACE | N.52S | 0.0 | 1.025 | 0.0 | 71.57 | 15.0 | 12.19 | | |
| VOID SPACE | N.53P | 0.0 | 1.025 | 0.0 | 41.22 | -15.0 | 12.19 | | |
| VOID SPACE | N.53S | 0.0 | 1.025 | 0.0 | 41.22 | 15.0 | 12.19 | | |
| VOID SPACE | N.54 | 0.0 | 1.025 | 0.0 | 84.58 | 0.0 | 12.19 | | |
| VOID SPACE | N.55 | 0.0 | 1.025 | 0.0 | 28.19 | 0.0 | 12.19 | | |
| VOID SPACE | N.56 | 0.0 | 1.025 | 0.0 | 51.11 | 0.0 | 24.64 | | |
| VOID SPACE | N.57 | 0.0 | 1.025 | 0.0 | 61.67 | 0.0 | 24.64 | | |
| VOID SPACE | N.58S | 0.0 | 1.025 | 0.0 | 42.3 | 15.0 | 12.19 | | |
| VOID SPACE | N.58P | 0.0 | 1.025 | 0.0 | 42.3 | -15.0 | 12.19 | | |
| VOID SPACE | N.59S | 0.0 | 1.025 | 0.0 | 70.48 | 15.0 | 12.19 | | |
| VOID SPACE | N.59P | 0.0 | 1.025 | 0.0 | 70.48 | -15.0 | 12.19 | | |
| VOID SPACE | N.60 | 0.0 | 1.025 | 0.0 | 56.39 | -0.6 | 24.76 | | |
| VOID SPACE | N.61P | 0.0 | 1.025 | 0.0 | 70.89 | -27.4 | 10.67 | | |
| VOID SPACE | N.61S | 0.0 | 1.025 | 0.0 | 70.89 | 27.4 | 10.67 | | |
| VOID SPACE | N.62S | 0.0 | 1.025 | 0.0 | 27.69 | 29.9 | 14.50 | | |
| VOID SPACE | N.62P | 0.0 | 1.025 | 0.0 | 27.69 | -29.9 | 14.50 | | |
| VOID SPACE | N.63S | 0.0 | 1.025 | 0.0 | 84.58 | 29.9 | 14.50 | | |
| VOID SPACE | N.63P | 0.0 | 1.025 | 0.0 | 84.58 | -29.9 | 14.50 | | |
| VOID SPACE | N.64S | 0.0 | 1.025 | 0.0 | 27.69 | 29.9 | 22.95 | | |
| VOID SPACE | N.64P | 0.0 | 1.025 | 0.0 | 27.69 | -29.9 | 22.95 | | |
| VOID SPACE | N.65S | 0.0 | 1.025 | 0.0 | 84.58 | 29.9 | 22.95 | | |
| VOID SPACE | N.65P | 0.0 | 1.025 | 0.0 | 84.58 | -29.9 | 22.95 | | |
| CHAIN LOCKER | 9P | 0.0 | 1.025 | 0.0 | 93.73 | -34.8 | 15.40 | | |
| CHAIN LOCKER | 10P | 0.0 | 1.025 | 0.0 | 19.05 | -34.8 | 15.40 | | |
| CHAIN LOCKER | 11S | 0.0 | 1.025 | 0.0 | 19.05 | 34.8 | 15.40 | | |
| CHAIN LOCKER | 12S | 0.0 | 1.025 | 0.0 | 93.73 | 34.8 | 15.40 | | |
| VOID Spaces | | | | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

Determination of Unit Displacement

| Displacement | | | Weight
(M.T) | LCG
(m) | TCG
(m) | VCG
(m) | FSCT | FSCL |
|--------------------------------|---|---|-----------------|------------|------------|------------|------|------|
| Inclined Lightship | - | - | 31164.5 | 60.62 | -0.30 | 29.67 | 0.00 | 0.00 |
| Drill Water Tanks (Process FW) | | | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Potable Water | | | 364.2 | 84.34 | 3.08 | 26.15 | 0.00 | 0.01 |
| Fuel Oil | | | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Diesel Oil | | | 357.4 | 75.92 | -4.28 | 39.08 | 0.01 | 0.00 |
| Lub Oils | | | 4.1 | 51.86 | -3.14 | 26.73 | 0.00 | 0.00 |
| Miscellaneous Tanks | | | 1.0 | 54.39 | -12.50 | 53.00 | 0.00 | 0.00 |
| Non Structural Tanks | | | 4.1 | 67.30 | -2.04 | 44.58 | 0.00 | 0.00 |
| Crew & Stores @ TT | | | 13.0 | 82.95 | -2.06 | 37.72 | 0.00 | 0.00 |
| Crew & Stores @ SD | | | 21.6 | 62.47 | 1.09 | 41.13 | 0.00 | 0.00 |
| Crew & Stores @ MD | | | 6.5 | 56.20 | 8.51 | 43.87 | 0.00 | 0.00 |
| Helicopter & Laydown Areas | | | 8.1 | 106.05 | -19.00 | 36.58 | 0.00 | 0.00 |
| Process Content | | | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vertical Mooring Forces | | | 15.1 | 63.51 | 0.00 | 18.29 | - | - |
| Chain Lockers | | | 618.4 | 44.85 | -8.91 | 9.74 | - | - |
| Connected Risers | | | 0.0 | 0.00 | 0.00 | 0.00 | - | - |
| Miscellaneous Items | | | 368.2 | 62.47 | 5.29 | 34.36 | 0.00 | 0.00 |
| Void Spaces | | | 0.0 | 0.00 | 0.00 | 0.00 | - | - |
| SW Ballast | | | 18640.5 | 50.30 | -0.16 | 5.68 | 0.00 | 0.03 |
| Displacement | | | 51586.5 | 57.00 | -0.32 | 20.84 | 0.01 | 0.04 |

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Determination of Deadweight Loads and Unit Displacement

11.5
V

| Calculation of Loading Condition | | | |
|----------------------------------|----------|---------|---|
| Hydrostatic Data | | | Formula & Notes |
| Displacement | (tonnes) | 51586.5 | |
| Mean Draft from USK | (m) | 18.79 | T, From Hydrostatics+E7 |
| Foreward Draft at Ponton | (m) | 18.79 | Fore Draft = T+Trim*LCF/LBP |
| Aft Draft at Pontoon | (m) | 18.79 | Aft Draft = T - Trim*(LBP-LCF)/LBP |
| Trim | (m) | 0.00 | Trim = (LCB-LCG)/(GML*LBP) |
| Trim Angle | (deg) | 0.00 | Trim Angle = arctan(trim/LBP) |
| Heel | (m) | 0.00 | Heel = (TCB-TCG)/(GMT*Breadth) |
| Heeling Angle | (deg) | 0.00 | Heel Angle = arctan(heel/breadth) |
| LCB | (m) | 57.11 | From Hydrostatics |
| LCF | (m) | 56.43 | From Hydrostatics |
| TCF | (m) | -0.02 | From Hydrostatics |
| Coordinates of COG | | | |
| LCG | (m) | 57.00 | From Hydrostatics |
| TCG | (m) | -0.32 | From Hydrostatics |
| VCG | (m) | 20.84 | From Hydrostatics |
| Statical Stability | | | |
| KML | (m) | 27.80 | From Hydrostatics |
| KMT | (m) | 27.40 | From Hydrostatics |
| VCG | (m) | 20.84 | |
| FSC (trans) | (m) | 0.01 | FSC = Total Transverse FS Inertia / ∇ |
| FSC (long) | (m) | 0.04 | FSC = Total Longitudinal FS Inertia / ∇ |
| VCG + FSC(trans) | (m) | 20.86 | |
| VCG + FSC (long) | (m) | 20.88 | |
| GMT | (m) | 6.54 | GMT = KMT - (VCG+FSC(trans)) |
| GML | (m) | 6.92 | GML = KML - (VCG+FSC(long)) |
| VCG Margin | | | |
| Max Allowable VCG | (m) | 26.90 | From Max Allowable VCG Curve |
| KG | (m) | 20.88 | Is max FSC VCG value |
| VCG Margin | (m) | 6.02 | VCG Margin = Max Allow VCG - KG |

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Determination of Displacement from Draft Readings

Average Water Density $\frac{1.0255 \text{ tonnes/m}^3}$
 Length Between Perpendiculars (LBP) = $\frac{112.776}{\text{m}}$
 Distance Between Draft Marks (LM) = $\frac{79.25}{\text{m}}$ (See sketch attached)

DRAFTS FROM U.S.K. (metres)

| | Aft | Midships | Fore |
|-----------|---------------------|---------------------|---------------------|
| Port | 18.77 | 18.80 | 18.82 |
| Starboard | 18.76 | 18.75 | 18.82 |
| Average | 18.77 | 18.80 | 18.82 |
| | (T _{aft}) | (T _{mid}) | (T _{Fwd}) |

Draft calculations on perpendiculars

C1, C2, C3 values *
*(see sketch attached)

$$\begin{aligned}
 T_{AP} &= T_{aft} + C1 \cdot (T_{aft} - T_{fwd}) / LM & T_{AP} &= \underline{18.76 \text{ m}} & C1 &= \underline{16.76 \text{ m}} \\
 T_{\otimes} &= T_{mid} - C2 \cdot (T_{aft} - T_{fwd}) / LM & T_{\otimes} &= \underline{18.80 \text{ m}} & C2 &= \underline{0.20 \text{ m}} \\
 T_{FP} &= T_{fwd} - C3 \cdot (T_{aft} - T_{fwd}) / LM & T_{FP} &= \underline{18.83 \text{ m}} & C3 &= \underline{16.76 \text{ m}}
 \end{aligned}$$

Average Draft from USK: $T_{MEAN} = (T_{AP} + 4 \cdot T_{\otimes} + T_{FP}) / 6$ $\underline{18.80 \text{ m}}$

Draft Correction of SW Density $T'_{MEAN} = T_{MEAN} \cdot (SW_{actual} / 1.025)$ $\underline{18.81 \text{ m}}$

Unit's Trim $Trim = T_{fwd} - T_{aft}$ $\underline{0.05 \text{ m}}$

Longitudinal Centre of Flotation $LCF \text{ (from } \otimes) =$ $\underline{-0.04 \text{ m}}$

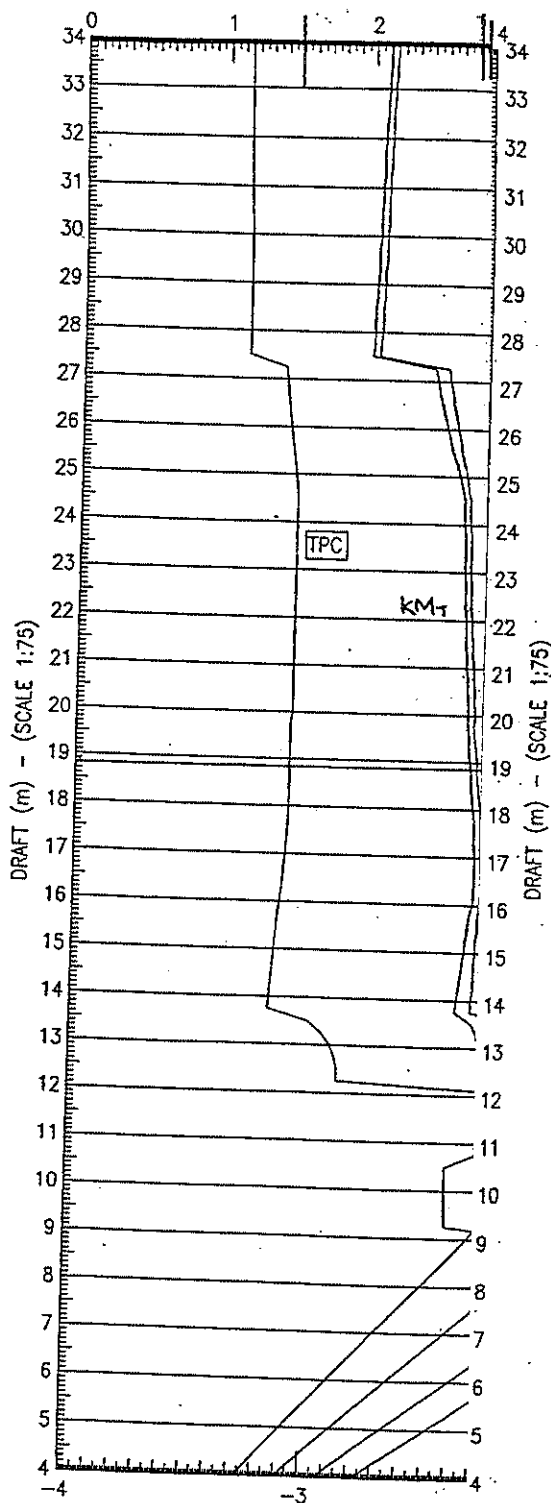
Layer Correction $t = LCF / LBP \times Trim$ $\underline{0.0 \text{ m}}$

Draft at LCF (inc Layer Correction) $Draft \text{ at LCF } (T'_{LCF})$ $\underline{18.81 \text{ m}}$

Displacement (at Draft T'_{LCF}) $Displacement (\Delta) =$ $\underline{51622 \text{ Tonnes}}$

Hydrostatic Properties of Unit

| DRAFT
(m) | DISPL.
(tonnes) | LCB
(m) | TCB
(m) | VCB
(m) | WPA
(m ²) | LCF
(m) | TCF
(m) | KMT
(m) | KML
(m) |
|--------------|--------------------|------------|------------|------------|--------------------------|------------|------------|------------|------------|
| 18.81 | 51622.5 | -0.72 | -0.02 | 7.88 | 1485.1 | -0.04 | -0.04 | 27.30 | 27.80 |



For DRAFT 18.8m

$$TPC = 1.5 \times 10 = 15 \text{ t/cm}$$

$$KM_T = 2.7 \times 10 = 27.7 \text{ m}$$

$$KM_L = 2.76 \times 10 = 27.6 \text{ m}$$

$$MCT = 4.61 \times GM_L =$$

$$LCB = -0.71 \text{ m}$$

$$VOL = 559 \times 10^4 = 55900 \text{ m}^3$$

$$LCF = -0.04 \text{ m}$$

$$MCH = 6.61 \times GM_T =$$

$$VCB = 7.85 \text{ m}$$

VALUES ARE WITHIN
ERROR FOR READING FROM
CHART.

DE-3010.38-1320-941-NBD-371-03 CROSS CURVES OF STABILITY FOR 94° ROLL AXIS
DE-3010.38-1320-941-NBD-371-02 CROSS CURVES OF STABILITY FOR 45° ROLL AXIS
DE-3010.38-1320-941-NBD-371-01 CROSS CURVES OF STABILITY FOR 0° ROLL AXIS

DRAWING NUMBER DRAWING TITLE

REFERENCE DRAWINGS

A 25/01/99 A.F.C. SCE
O 10/97 L.D.C. SCE MSE MSE

REV ISSUE DATE DESCRIPTION OF REVISION DRAWN BY CHD BY APPD BY APPD CLIENT

BR BRASOIL P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No - 7/15/2150

NOBLE DENTON Petromec AMEC

TITLE DRAWN/DATE

HYDROSTATIC CURVES FOR UNIT PETROBRAS 36

APPROVED/DATE

SCALE AS NOTED (A1)

DRAWING NUMBER DE-3010.38-1320-941-NBD-370-01

REV A



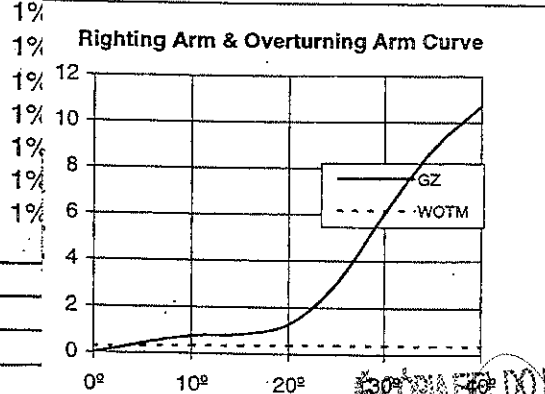
| Sea Water Ballast Tanks | Max Vol.
m³ | Density
t/m³ | %TCG
from CL | VCG
m | FSC _T
m | FSC _L
m |
|-------------------------|----------------|-----------------|-----------------|----------|-----------------------|-----------------------|
| SW Ballast 1P | 886.7 | 1.025 | 99' -0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 99' 0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 99' 0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 99' 0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 1° -3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 1° 18.8 | 27.4 | 0.000 | 0.000 |
| SW Ballast 4P | 798.3 | 1.025 | 99' -0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 99' 6.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1° 4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1° 0.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1° 8.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 47' 5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 99' -6.2 | 42.6 | 0.004 | 0.013 |
| SW Ballast 7S | 555.2 | 1.025 | 1° 1.5 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 99' 0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 99' 2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 99' 0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 99' 0.0 | 0.0 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1° 0.8 | 5.42 | 0.007 | 0.055 |
| SW Ballast 16S | 249.7 | 1.025 | 1° | | | |
| SW Ballast 17P | 523.9 | 1.025 | 31° 0.016 | 21.95 | 0.012 | 0.069 |
| SW Ballast 17S | 523.9 | 1.025 | 1° | | | |
| SW Ballast 18P | 555.2 | 1.025 | 99' | | | |
| SW Ballast 18S | 555.2 | 1.025 | 99' | | | |
| SW Ballast 19P | 728.8 | 1.025 | 1° | | | |
| SW Ballast 19S | 728.8 | 1.025 | 1° | | | |
| SW Ballast 20P | 768.2 | 1.025 | 1° | | | |
| SW Ballast 20S | 768.2 | 1.025 | 92° | | | |
| SW Ballast 21P | 963.7 | 1.025 | 1° | | | |
| SW Ballast 21S | 963.7 | 1.025 | 1° | | | |
| SW Ballast 22P | 1067.3 | 1.025 | 1° | | | |
| SW Ballast 22S | 1067.3 | 1.025 | 1° | | | |
| SW Ballast 23P | 665.6 | 1.025 | 1° | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1° | | | |
| SW Ballast 24P | 980.8 | 1.025 | 1° | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1° | | | |
| SW Ballast 25P | 665.6 | 1.025 | 1° | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1° | | | |
| SW Ballast 26P | 980.8 | 1.025 | 1° | | | |
| SW Ballast 26S | 980.8 | 1.025 | 1° | | | |
| SW Ballast Total | | | | | | |

Righting Arm & Overturning Arm Curve

Corrected VCG = 21.96 m 22.02 m
T / KML = 26.80 m 27.20 m
T / GML = 4.84 m 5.18 m

Stability Margin

Allowable VCG = 23.04 m
Stability Margin = 1.02 m



| | | |
|----------|----|--|
| | BY | |
| Prepared | | |
| Checked | | |

| Sea Water Ballast Tanks | Max Vol. m³ | Density t/m³ | % TCG from CL | VCG m | FSC _T m | FSC _L m |
|-------------------------|-------------|--------------|---------------|-------|--------------------|--------------------|
| SW Ballast 1P | 886.7 | 1.025 | 99° -0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 99° 0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 98° 0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 96° 0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 1° -3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 1° -18.8 | 27.4 | 0.000 | 0.000 |
| SW Ballast 4P | 798.3 | 1.025 | 99° -0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 99° 6.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1° 4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1° 0.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1° 8.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 45° 5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 99° -6.2 | 42.6 | 0.004 | 0.013 |
| SW Ballast 7S | 555.2 | 1.025 | 1° 1.5 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 99° 0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 99° 2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 99° 0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 99° 0.0 | 0.0 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1° 0.6 | 5.37 | 0.018 | 0.081 |
| SW Ballast 16S | 249.7 | 1.025 | 1° | | | |
| SW Ballast 17P | 523.9 | 1.025 | 39° 0.025 | 21.94 | 0.023 | 0.095 |
| SW Ballast 17S | 523.9 | 1.025 | 1° | | | |
| SW Ballast 18P | 555.2 | 1.025 | 99° | | | |
| SW Ballast 18S | 555.2 | 1.025 | 99° | | | |
| SW Ballast 19P | 728.8 | 1.025 | 1° | | | |
| SW Ballast 19S | 728.8 | 1.025 | 1° | | | |
| SW Ballast 20P | 768.2 | 1.025 | 1° | | | |
| SW Ballast 20S | 768.2 | 1.025 | 92° | | | |
| SW Ballast 21P | 963.7 | 1.025 | 1° | | | |
| SW Ballast 21S | 963.7 | 1.025 | 1° | | | |
| SW Ballast 22P | 1067.3 | 1.025 | 1° | | | |
| SW Ballast 22S | 1067.3 | 1.025 | 1° | | | |
| SW Ballast 23P | 665.6 | 1.025 | 1° | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1° | | | |
| SW Ballast 24P | 980.8 | 1.025 | 1° | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1° | | | |
| SW Ballast 25P | 665.6 | 1.025 | 1° | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1° | | | |
| SW Ballast 26P | 980.8 | 1.025 | 1° | | | |
| SW Ballast 26S | 980.8 | 1.025 | 1° | | | |
| SW Ballast Total | | | | | | |

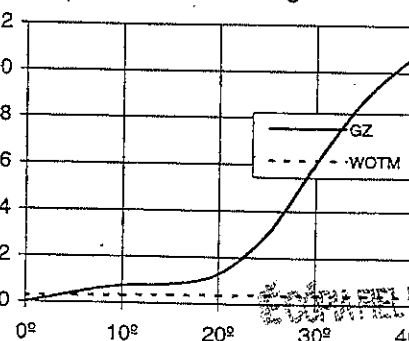
Stability

| | | |
|-----------------|---------|---------|
| Corrected VCG = | 21.96 m | 22.03 m |
| T / KML = | 26.80 m | 27.20 m |
| T / GML = | 4.84 m | 5.17 m |

Stability Margin

| | |
|--------------------|---------|
| Swable VCG = | 23.04 m |
| Stability Margin = | 1.01 m |

Righting Arm & Overturning Arm Curve



| | | |
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| | BY | |
| Prepared | | |
| Checked | | |

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MA-3010.38-1020-916-NBD-909

COPIA DEL DOCUMENTO ORIGINAL
JOSE CARLOS PINHEIRO GOMES
DIRETOR



| Sea Water Ballast Tanks | Max Vol.
m³ | Density
t/m³ | % TCG
from CL | VCG
m | FSC _T
m | FSC _L
m |
|-------------------------|----------------|-----------------|---------------------|----------|-----------------------|-----------------------|
| SW Ballast 1P | 886.7 | 1.025 | 99% -0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 99% 0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 99% 0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 99% 0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 1% -3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 1% 0.8 | 25.2 | 0.005 | 0.037 |
| SW Ballast 4P | 798.3 | 1.025 | 99% -0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 99% 6.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1% 4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1% 0.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1% 8.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 47% 5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 99% -5.1 | 42.4 | 0.002 | 0.007 |
| SW Ballast 7S | 555.2 | 1.025 | 1% 1.5 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 99% 0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 99% 2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 99% 0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 99% 0.0 | 0.0 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1% 0.8 | 5.42 | 0.007 | 0.055 |
| SW Ballast 16S | 249.7 | 1.025 | 1% | | | |
| SW Ballast 17P | 523.9 | 1.025 | 31% 0.211 | 21.91 | 0.016 | 0.100 |
| SW Ballast 17S | 523.9 | 1.025 | 1% | | | |
| SW Ballast 18P | 555.2 | 1.025 | 99% | | | |
| SW Ballast 18S | 555.2 | 1.025 | 99% | | | |
| SW Ballast 19P | 728.8 | 1.025 | 1% corrected VCG = | 21.92 m | 22.01 m | |
| SW Ballast 19S | 728.8 | 1.025 | 1% MT / KML = | 26.80 m | 27.20 m | |
| SW Ballast 20P | 768.2 | 1.025 | 1% MT / GML = | 4.88 m | 5.19 m | |
| SW Ballast 20S | 768.2 | 1.025 | 92% | | | |
| SW Ballast 21P | 963.7 | 1.025 | 1% ability Margin | | | |
| SW Ballast 21S | 963.7 | 1.025 | 1% | | | |
| SW Ballast 22P | 1067.3 | 1.025 | 1% allowable VCG = | | 23.04 m | |
| SW Ballast 22S | 1067.3 | 1.025 | 1% ability Margin = | | 1.03 m | |
| SW Ballast 23P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 24P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1% | | | |
| SW Ballast 25P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 26P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 26S | 980.8 | 1.025 | 1% | | | |
| SW Ballast Total | | | | | | |

99% atical Stability

99%

1% rrected VCG =

1% MT / KML =

1% MT / GML =

92%

1% ability Margin

1%

1% allowable VCG =

1% ability Margin =

1%

1%

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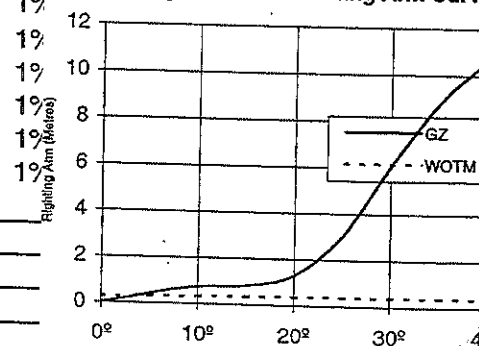
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Righting Arm & Overturning Arm Curve



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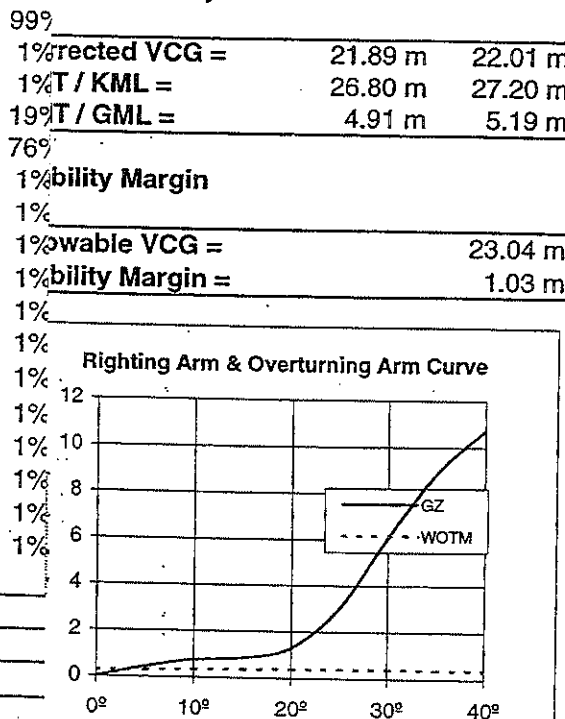
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MA-3010.38-1320-915-NBB-999

COPIA FEITA DO DOCUMENTO ORIGINAL
DIVISÃO DE SERVIÇOS PORTUÁRIOS

| Sea Water Ballast Tanks | Max Vol.
m³ | Density
t/m³ | %TCG
from CL | VCG
m | FSC _T
m | FSC _L
m |
|-------------------------|----------------|-----------------|--------------------|----------|-----------------------|-----------------------|
| SW Ballast 1P | 886.7 | 1.025 | 99% -0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 99% 0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 99% 0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 99% 0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 1% -3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 1% 0.8 | 25.2 | 0.005 | 0.037 |
| SW Ballast 4P | 798.3 | 1.025 | 99% -0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 99% 6.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1% 4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1% 0.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1% 8.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 36% 5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 99% -5.1 | 42.4 | 0.002 | 0.007 |
| SW Ballast 7S | 555.2 | 1.025 | 1% 1.5 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 99% 0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 99% 2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 99% 0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 99% 0.0 | 0.0 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1% -0.4 | 5.26 | 0.011 | 0.087 |
| SW Ballast 16S | 249.7 | 1.025 | 1% | | | |
| SW Ballast 17P | 523.9 | 1.025 | 40% 0.025 | 21.87 | 0.019 | 0.132 |
| SW Ballast 17S | 523.9 | 1.025 | 1% | | | |
| SW Ballast 18P | 555.2 | 1.025 | 99% | | | |
| SW Ballast 18S | 555.2 | 1.025 | 99% | | | |
| SW Ballast 19P | 728.8 | 1.025 | 1% rected VCG = | 21.89 m | 22.01 m | |
| SW Ballast 19S | 728.8 | 1.025 | 1% T / KML = | 26.80 m | 27.20 m | |
| SW Ballast 20P | 768.2 | 1.025 | 19% T / GML = | 4.91 m | 5.19 m | |
| SW Ballast 20S | 768.2 | 1.025 | 76% | | | |
| SW Ballast 21P | 963.7 | 1.025 | 1% bility Margin | | | |
| SW Ballast 21S | 963.7 | 1.025 | 1% | | | |
| SW Ballast 22P | 1067.3 | 1.025 | 1% allowable VCG = | 23.04 m | | |
| SW Ballast 22S | 1067.3 | 1.025 | 1% bility Margin = | 1.03 m | | |
| SW Ballast 23P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 24P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1% | | | |
| SW Ballast 25P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 26P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 26S | 980.8 | 1.025 | 1% | | | |
| SW Ballast Total | | | | | | |

Righting Arm & Overturning Arm Curve



| | | |
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| Prepared | BY | |
| Checked | | |

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MA-3010-8-11820-915-NBD-989

JOSE CARLOS PIMENTEL BUSMAO
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFICOS

1430

| Sea Water
Ballast Tanks | Max Vol.
m³ | Density
t/m³ | % TCG
from CL | VCG
m | FSC _T
m | FSC _L
m |
|----------------------------|----------------|-----------------|-----------------------|----------|-----------------------|-----------------------|
| SW Ballast 1P | 886.7 | 1.025 | 99 -0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 99 0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 99 0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 99 0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 1' -3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 1' 20.5 | 27.4 | 0.000 | 0.000 |
| SW Ballast 4P | 798.3 | 1.025 | 99 -0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 99 6.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1' 4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1' 0.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1' 8.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 47 5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 99 -6.2 | 42.6 | 0.004 | 0.013 |
| SW Ballast 7S | 555.2 | 1.025 | 1' 1.5 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 99 0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 99 2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 99 0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 99 0.0 | 0.0 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1' 0.8 | 5.42 | 0.007 | 0.055 |
| SW Ballast 16S | 249.7 | 1.025 | 1' | | | |
| SW Ballast 17P | 523.9 | 1.025 | 31 0.345 | 21.95 | 0.012 | 0.069 |
| SW Ballast 17S | 523.9 | 1.025 | 1' | | | |
| SW Ballast 18P | 555.2 | 1.025 | 99 | | | |
| SW Ballast 18S | 555.2 | 1.025 | 99 | | | |
| SW Ballast 19P | 728.8 | 1.025 | 1' Corrected VCG = | 21.96 m | 22.02 m | |
| SW Ballast 19S | 728.8 | 1.025 | 1' MT / KML = | 26.80 m | 27.20 m | |
| SW Ballast 20P | 768.2 | 1.025 | 1' MT / GML = | 4.84 m | 5.18 m | |
| SW Ballast 20S | 768.2 | 1.025 | 92 | | | |
| SW Ballast 21P | 963.7 | 1.025 | 1' Stability Margin | | | |
| SW Ballast 21S | 963.7 | 1.025 | 1' | | | |
| SW Ballast 22P | 1067.3 | 1.025 | 1' Allowable VCG = | | 23.04 m | |
| SW Ballast 22S | 1067.3 | 1.025 | 1' Stability Margin = | | 1.02 m | |
| SW Ballast 23P | 665.6 | 1.025 | 1' | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1' | | | |
| SW Ballast 24P | 980.8 | 1.025 | 1' | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1' | | | |
| SW Ballast 25P | 665.6 | 1.025 | 1' | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1' | | | |
| SW Ballast 26P | 980.8 | 1.025 | 1' | | | |
| SW Ballast 26S | 980.8 | 1.025 | 1' | | | |
| SW Ballast Total | | | | | | |

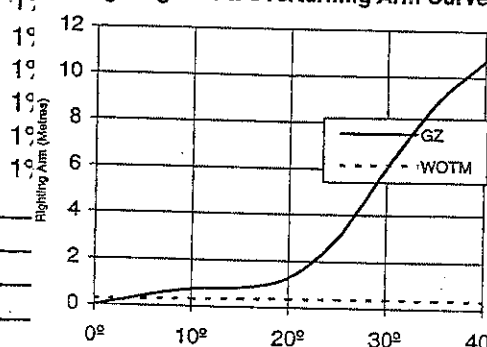
Stability

| | | |
|--------------------|---------|---------|
| 1' Corrected VCG = | 21.96 m | 22.02 m |
| 1' MT / KML = | 26.80 m | 27.20 m |
| 1' MT / GML = | 4.84 m | 5.18 m |

Stability Margin

| | |
|-----------------------|---------|
| 1' Allowable VCG = | 23.04 m |
| 1' Stability Margin = | 1.02 m |

Righting Arm & Overturning Arm Curve



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| | BY | |
| Prepared | | |
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MA-3010.38-1320-915-NBD-909

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

ÁREA DE SERVIÇOS PORTUÁRIOS
DIRETOR
DEPARTAMENTO DE SERVIÇOS CARTORIAIS

| Sea Water Ballast Tanks | Max Vol.
m³ | Density
t/m³ | %TCG
from CL | VCG
m | FSC _T
m | FSC _L
m |
|-------------------------|----------------|-----------------|---------------------|----------|-----------------------|-----------------------|
| SW Ballast 1P | 886.7 | 1.025 | 99% -0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 99% 0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 99% 0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 90% 0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 1% -3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 1% 20.5 | 27.4 | 0.000 | 0.000 |
| SW Ballast 4P | 798.3 | 1.025 | 99% -0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 99% 6.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1% 4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1% 0.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1% 8.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 47% 5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 99% -6.2 | 42.6 | 0.004 | 0.013 |
| SW Ballast 7S | 555.2 | 1.025 | 1% 1.5 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 99% 0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 99% 2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 99% 0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 99% 0.0 | 0.0 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1% -1.1 | 5.23 | 0.012 | 0.068 |
| SW Ballast 16S | 249.7 | 1.025 | 1% | | | |
| SW Ballast 17P | 523.9 | 1.025 | 90% 0.025 | 21.91 | 0.017 | 0.082 |
| SW Ballast 17S | 523.9 | 1.025 | 1% | | | |
| SW Ballast 18P | 555.2 | 1.025 | 99% | | | |
| SW Ballast 18S | 555.2 | 1.025 | 99% | | | |
| SW Ballast 19P | 728.8 | 1.025 | 1% rrected VCG = | 21.93 m | 21.99 m | |
| SW Ballast 19S | 728.8 | 1.025 | 1% T / KML = | 26.80 m | 27.20 m | |
| SW Ballast 20P | 768.2 | 1.025 | 1% T / GML = | 4.87 m | 5.21 m | |
| SW Ballast 20S | 768.2 | 1.025 | 63% | | | |
| SW Ballast 21P | 963.7 | 1.025 | 1% ability Margin | | | |
| SW Ballast 21S | 963.7 | 1.025 | 1% | | | |
| SW Ballast 22P | 1067.3 | 1.025 | 1% owable VCG = | | 23.04 m | |
| SW Ballast 22S | 1067.3 | 1.025 | 1% ability Margin = | | 1.05 m | |
| SW Ballast 23P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 24P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1% | | | |
| SW Ballast 25P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 26P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 26S | 980.8 | 1.025 | 1% | | | |
| SW Ballast Total | | | | | | |

99%tical Stability

99%

| | | |
|------------------|---------|---------|
| 1% rrected VCG = | 21.93 m | 21.99 m |
| 1% T / KML = | 26.80 m | 27.20 m |
| 1% T / GML = | 4.87 m | 5.21 m |

63%

1% ability Margin

1%

| | |
|---------------------|---------|
| 1% owable VCG = | 23.04 m |
| 1% ability Margin = | 1.05 m |

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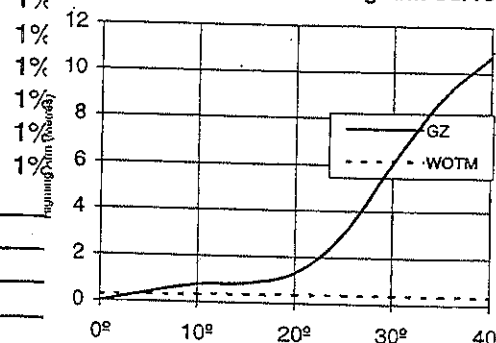
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Righting Arm & Overturning Arm Curve



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| | BY | |
| Prepared | | |
| Checked | | |

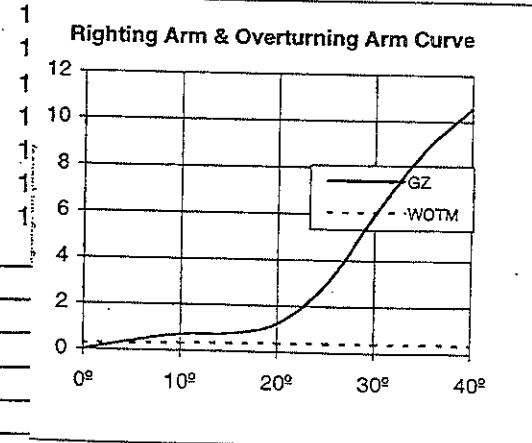
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JOSÉ CARLOS PINHEIRO GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

| Sea Water Ballast Tanks | Max Vol. m³ | Density t/m³ | %TCG from CL | VCG m | FSC _T m | FSC _L m |
|-------------------------|-------------|--------------|--|-------|--------------------|--------------------|
| SW Ballast 1P | 886.7 | 1.025 | 95 -0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 95 0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 95 0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 95 0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 1' -3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 1' 6.1 | 40.6 | 0.000 | 0.000 |
| SW Ballast 4P | 798.3 | 1.025 | 95 -0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 95 6.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1' 4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1' 0.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1' 8.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 47 5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 95 -11.7 | 43.7 | 0.004 | 0.013 |
| SW Ballast 7S | 555.2 | 1.025 | 1' 1.5 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 95 0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 95 2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 95 0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 95 26.1 | 25.1 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1' 0.8 | 5.42 | 0.007 | 0.055 |
| SW Ballast 16S | 249.7 | 1.025 | 1' | | | |
| SW Ballast 17P | 523.9 | 1.025 | 30.084 | 22.12 | 0.012 | 0.069 |
| SW Ballast 17S | 523.9 | 1.025 | 1' | | | |
| SW Ballast 18P | 555.2 | 1.025 | 95 Static Stability | | | |
| SW Ballast 18S | 555.2 | 1.025 | | | | |
| SW Ballast 19P | 728.8 | 1.025 | 95 Corrected VCG = 22.13 m 22.19 m | | | |
| SW Ballast 19S | 728.8 | 1.025 | | | | |
| SW Ballast 20P | 768.2 | 1.025 | | | | |
| SW Ballast 20S | 768.2 | 1.025 | 95 IT / KML = 26.80 m 27.20 m | | | |
| SW Ballast 21P | 963.7 | 1.025 | | | | |
| SW Ballast 21S | 963.7 | 1.025 | 95 IT / GML = 4.67 m 5.01 m | | | |
| SW Ballast 22P | 1067.3 | 1.025 | | | | |
| SW Ballast 22S | 1067.3 | 1.025 | 95 Stability Margin | | | |
| SW Ballast 23P | 665.6 | 1.025 | | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1 allowable VCG = 23.04 m | | | |
| SW Ballast 24P | 980.8 | 1.025 | | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1 Stability Margin = 0.85 m | | | |
| SW Ballast 25P | 665.6 | 1.025 | | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1 Righting Arm & Overturning Arm Curve | | | |
| SW Ballast 26P | 980.8 | 1.025 | | | | |
| SW Ballast 26S | 980.8 | 1.025 | | | | |
| SW Ballast Total | | | | | | |



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MA-3010.38-1320-915-NBD-909

É CÓPIA FIEL DO DOCUMENTO ORIGINAL
JOSE CARLOS PEREIRA GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

1433
K

| Sea Water Ballast Tanks | Max Vol.
m ³ | Density
t/m ³ | %TCG
from CL | VCG
m | FSC _T
m | FSC _L
m |
|-------------------------|----------------------------|-----------------------------|-----------------|----------|-----------------------|-----------------------|
| SW Ballast 1P | 886.7 | 1.025 | 99 -0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 99 0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 99 0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 99 0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 1° -3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 1° 6.1 | 40.6 | 0.000 | 0.000 |
| SW Ballast 4P | 798.3 | 1.025 | 99 -0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 99 6.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1° 4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1° 0.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1° 8.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 3° 5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 96 -11.7 | 43.7 | 0.004 | 0.013 |
| SW Ballast 7S | 555.2 | 1.025 | 4° 1.5 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 99 0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 99 -2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 99 0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 99 26.1 | 25.1 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1° 0.2 | 5.49 | 0.009 | 0.067 |
| SW Ballast 16S | 249.7 | 1.025 | 1° | | | |
| SW Ballast 17P | 523.9 | 1.025 | 31 0.025 | 22.20 | 0.014 | 0.081 |
| SW Ballast 17S | 523.9 | 1.025 | 1° | | | |
| SW Ballast 18P | 555.2 | 1.025 | 99 | | | |
| SW Ballast 18S | 555.2 | 1.025 | 99 | | | |
| SW Ballast 19P | 728.8 | 1.025 | 1° | | | |
| SW Ballast 19S | 728.8 | 1.025 | 1° | | | |
| SW Ballast 20P | 768.2 | 1.025 | 1° | | | |
| SW Ballast 20S | 768.2 | 1.025 | 92 | | | |
| SW Ballast 21P | 963.7 | 1.025 | 1° | | | |
| SW Ballast 21S | 963.7 | 1.025 | 1° | | | |
| SW Ballast 22P | 1067.3 | 1.025 | 1° | | | |
| SW Ballast 22S | 1067.3 | 1.025 | 1° | | | |
| SW Ballast 23P | 665.6 | 1.025 | 1° | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1° | | | |
| SW Ballast 24P | 980.8 | 1.025 | 1° | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1° | | | |
| SW Ballast 25P | 665.6 | 1.025 | 1° | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1° | | | |
| SW Ballast 26P | 980.8 | 1.025 | 1° | | | |
| SW Ballast 26S | 980.8 | 1.025 | 1° | | | |
| SW Ballast Total | | | | | | |

99tical Stability

99

| | | |
|----------------|---------|---------|
| 1°rected VCG = | 22.22 m | 22.28 m |
| 1°T / KML = | 26.80 m | 27.20 m |
| 1°T / GML = | 4.58 m | 4.92 m |

92

1°bility Margin

1°

| | |
|-------------------|---------|
| 1°wable VCG = | 23.04 m |
| 1°bility Margin = | 0.76 m |

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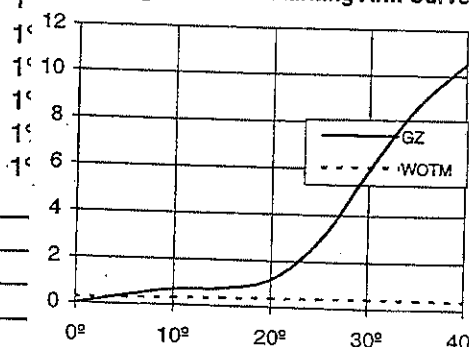
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Righting Arm & Overturning Arm Curve



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MA-3010.38-1320-915-NBD-909

CÓPIA FIEL DO DOCUMENTO ORIGINAL
JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

1034
12

| Sea Water Ballast Tanks | Max Vol.
m³ | Density
t/m³ | %CG
from CL | VCG
m | FSC _T
m | FSC _L
m |
|-------------------------|----------------|-----------------|--------------------|----------|-----------------------|-----------------------|
| SW Ballast 1P | 886.7 | 1.025 | 99'0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 99'0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 99'0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 99'0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 1'3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 1'6.1 | 40.6 | 0.000 | 0.000 |
| SW Ballast 4P | 798.3 | 1.025 | 99'0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 99'6.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1'4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1'0.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1'8.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 47'5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 99'11.7 | 43.7 | 0.004 | 0.013 |
| SW Ballast 7S | 555.2 | 1.025 | 1'1.5 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 99'0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 99'2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 99'0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 99'0.0 | 0.0 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1'2.8 | 5.53 | 0.007 | 0.055 |
| SW Ballast 16S | 249.7 | 1.025 | 1' | | | |
| SW Ballast 17P | 523.9 | 1.025 | 31'39.2 | 21.85 | 0.012 | 0.069 |
| SW Ballast 17S | 523.9 | 1.025 | 1' | | | |
| SW Ballast 18P | 555.2 | 1.025 | 99' | | | |
| SW Ballast 18S | 555.2 | 1.025 | 99' | | | |
| SW Ballast 19P | 728.8 | 1.025 | 1'ected VCG = | 21.86 m | 21.91 m | |
| SW Ballast 19S | 728.8 | 1.025 | 1'T / KML = | 26.80 m | 27.20 m | |
| SW Ballast 20P | 768.2 | 1.025 | 1'T / GML = | 4.94 m | 5.29 m | |
| SW Ballast 20S | 768.2 | 1.025 | 92' | | | |
| SW Ballast 21P | 963.7 | 1.025 | 1'ability Margin | | | |
| SW Ballast 21S | 963.7 | 1.025 | 100 | | | |
| SW Ballast 22P | 1067.3 | 1.025 | 1'able VCG = | | 23.04 m | |
| SW Ballast 22S | 1067.3 | 1.025 | 1'ability Margin = | | 1.13 m | |
| SW Ballast 23P | 665.6 | 1.025 | 1' | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1' | | | |
| SW Ballast 24P | 980.8 | 1.025 | 1' | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1' | | | |
| SW Ballast 25P | 665.6 | 1.025 | 1' | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1' | | | |
| SW Ballast 26P | 980.8 | 1.025 | 1' | | | |
| SW Ballast 26S | 980.8 | 1.025 | 1' | | | |
| SW Ballast Total | | | | | | |

99'ical Stability

99'

| | | |
|---------------|---------|---------|
| 1'ected VCG = | 21.86 m | 21.91 m |
| 1'T / KML = | 26.80 m | 27.20 m |
| 1'T / GML = | 4.94 m | 5.29 m |

92'

1'ability Margin

100

| | |
|--------------------|---------|
| 1'able VCG = | 23.04 m |
| 1'ability Margin = | 1.13 m |

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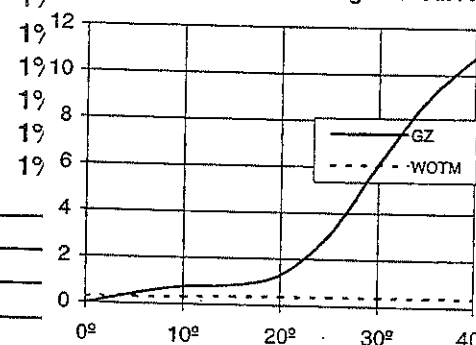
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Righting Arm & Overturning Arm Curve



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É CÓPIA FIEL DO DOCUMENTO ORIGINAL
JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CATEGÓRICOS

Righting Arm & Overturning Arm Curve

| Heel Angle ($^{\circ}$) | GZ (Solid Line) | WOTM (Dashed Line) |
|---------------------------|-----------------|--------------------|
| 0 $^{\circ}$ | 0.0 | 0.0 |
| 10 $^{\circ}$ | ~0.5 | ~0.1 |
| 20 $^{\circ}$ | ~1.0 | ~0.1 |
| 30 $^{\circ}$ | ~6.0 | ~0.1 |
| 40 $^{\circ}$ | ~10.5 | ~0.1 |

1136
K

| Sea Water Ballast Tanks | Max Vol. m³ | Density t/m³ | % FCG rom CL | VCG m | FSC _T m | FSC _L m |
|-------------------------|-------------|--------------|-------------------|---------|--------------------|--------------------|
| SW Ballast 1P | 886.7 | 1.025 | 99%-0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 99%0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 99%0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 99%0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 1%-3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 1%6.1 | 40.6 | 0.000 | 0.000 |
| SW Ballast 4P | 798.3 | 1.025 | 99%-0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 99%6.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1%4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1%0.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1%8.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 47%5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 99%11.7 | 43.7 | 0.004 | 0.013 |
| SW Ballast 7S | 555.2 | 1.025 | 1%1.5 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 99%0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 99%2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 99%0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 99%0.0 | 0.0 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1%3.5 | 5.48 | 0.007 | 0.055 |
| SW Ballast 16S | 249.7 | 1.025 | 1% | | | |
| SW Ballast 17P | 523.9 | 1.025 | 31%556 | 21.81 | 0.012 | 0.069 |
| SW Ballast 17S | 523.9 | 1.025 | 1% | | | |
| SW Ballast 18P | 555.2 | 1.025 | 99%ical Stability | | | |
| SW Ballast 18S | 555.2 | 1.025 | 99% | | | |
| SW Ballast 19P | 728.8 | 1.025 | 1%rected VCG = | 21.82 m | 21.88 m | |
| SW Ballast 19S | 728.8 | 1.025 | 1%T / KML = | 26.80 m | 27.20 m | |
| SW Ballast 20P | 768.2 | 1.025 | 1%T / GML = | 4.98 m | 5.32 m | |
| SW Ballast 20S | 768.2 | 1.025 | 92% | | | |
| SW Ballast 21P | 963.7 | 1.025 | 1%ility Margin | | | |
| SW Ballast 21S | 963.7 | 1.025 | 1% | | | |
| SW Ballast 22P | 1067.3 | 1.025 | 1%wable VCG = | | 23.04 m | |
| SW Ballast 22S | 1067.3 | 1.025 | 99%ility Margin = | | 1.16 m | |
| SW Ballast 23P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 24P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1% | | | |
| SW Ballast 25P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 26P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 26S | 980.8 | 1.025 | 1% | | | |
| SW Ballast Total | | | | | | |

99%ical Stability

99%

1%rected VCG =

21.82 m 21.88 m

1%T / KML =

26.80 m 27.20 m

1%T / GML =

4.98 m 5.32 m

92%

1%ility Margin

1%

1%wable VCG =

23.04 m

99%ility Margin =

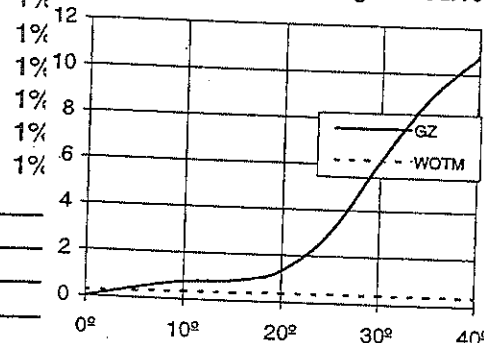
1.16 m

1%

1%

1%

Righting Arm & Overturning Arm Curve



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É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

1437

| Sea Water Ballast Tanks | Max Vol.
m³ | Density
t/m³ | % CG
from CL | VCG
m | FSC _T
m | FSC _L
m |
|-------------------------|----------------|-----------------|-------------------|----------|-----------------------|-----------------------|
| SW Ballast 1P | 886.7 | 1.025 | 99%0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 99%0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 99%0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 87%0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 37%3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 9% 6.1 | 40.6 | 0.000 | 0.000 |
| SW Ballast 4P | 798.3 | 1.025 | 99%0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 99%6.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1% 4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1% 0.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1% 8.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 47%5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 99%11.7 | 43.7 | 0.004 | 0.013 |
| SW Ballast 7S | 555.2 | 1.025 | 1% 1.5 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 99%0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 99%2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 99%0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 99%0.0 | 0.0 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1% 0.8 | 5.02 | 0.021 | 0.088 |
| SW Ballast 16S | 249.7 | 1.025 | 1% | | | |
| SW Ballast 17P | 523.9 | 1.025 | 1%0.025 | 22.03 | 0.026 | 0.101 |
| SW Ballast 17S | 523.9 | 1.025 | 1% | | | |
| SW Ballast 18P | 555.2 | 1.025 | 69%ical Stability | | | |
| SW Ballast 18S | 555.2 | 1.025 | 47% | | | |
| SW Ballast 19P | 728.8 | 1.025 | 1%rected VCG = | 22.06 m | 22.13 m | |
| SW Ballast 19S | 728.8 | 1.025 | 1%Γ / KML = | 26.80 m | 27.20 m | |
| SW Ballast 20P | 768.2 | 1.025 | 1%Γ / GML = | 4.74 m | 5.07 m | |
| SW Ballast 20S | 768.2 | 1.025 | 8% | | | |
| SW Ballast 21P | 963.7 | 1.025 | 1%ility Margin | | | |
| SW Ballast 21S | 963.7 | 1.025 | 1% | | | |
| SW Ballast 22P | 1067.3 | 1.025 | 1%wable VCG = | | 23.04 m | |
| SW Ballast 22S | 1067.3 | 1.025 | 99%ility Margin = | | 0.91 m | |
| SW Ballast 23P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 24P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1% | | | |
| SW Ballast 25P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 26P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 26S | 980.8 | 1.025 | 1% | | | |
| SW Ballast Total | | | | | | |

69%ical Stability

47%

1%rected VCG =

22.06 m

22.13 m

1%Γ / KML =

26.80 m

27.20 m

1%Γ / GML =

4.74 m

5.07 m

8%

1%ility Margin

1%

1%wable VCG =

23.04 m

99%ility Margin =

0.91 m

1%

1%

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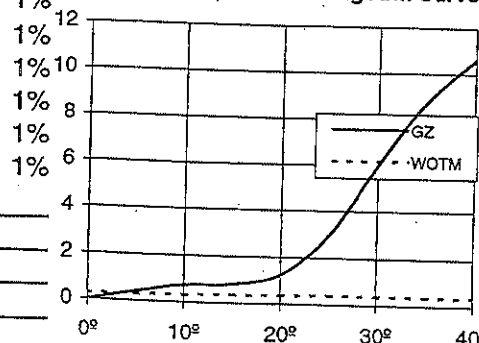
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Righting Arm & Overturning Arm Curve



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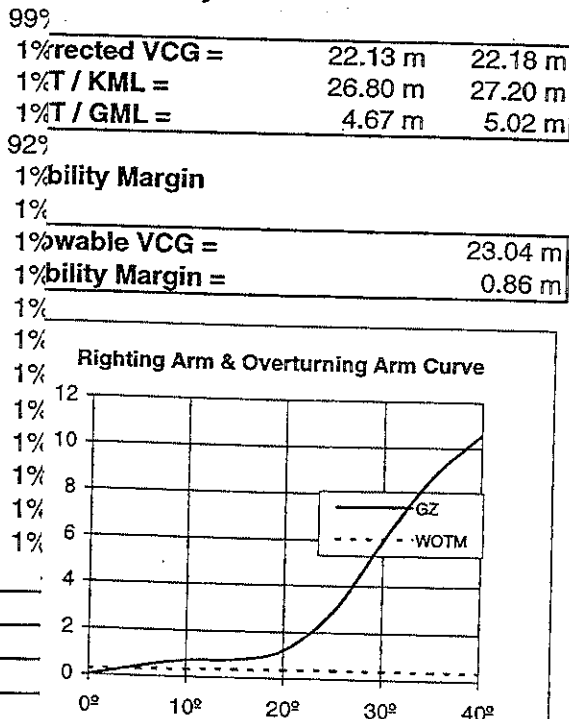
É CÓPIA FEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFICOS

1133

| Sea Water
Ballast Tanks | Max Vol.
m³ | Density
t/m³ | %TCG
from CL | VCG
m | FSC _T
m | FSC _L
m |
|----------------------------|----------------|-----------------|---------------------|----------|-----------------------|-----------------------|
| SW Ballast 1P | 886.7 | 1.025 | 99% -0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 99% 0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 99% 0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 99% 0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 1% -3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 1% 6.1 | 40.6 | 0.000 | 0.000 |
| SW Ballast 4P | 798.3 | 1.025 | 99% -0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 99% 6.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1% 4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1% 0.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1% 8.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 47% 5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 99% -11.7 | 43.7 | 0.004 | 0.013 |
| SW Ballast 7S | 555.2 | 1.025 | 1% 4.1 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 99% 0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 99% 2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 99% 0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 99% 0.0 | 0.0 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1% 0.8 | 5.42 | 0.007 | 0.055 |
| SW Ballast 16S | 249.7 | 1.025 | 1% | | | |
| SW Ballast 17P | 523.9 | 1.025 | 31% 0.047 | 22.11 | 0.012 | 0.069 |
| SW Ballast 17S | 523.9 | 1.025 | 1% | | | |
| SW Ballast 18P | 555.2 | 1.025 | 99% | | | |
| SW Ballast 18S | 555.2 | 1.025 | 99% | | | |
| SW Ballast 19P | 728.8 | 1.025 | 1% corrected VCG = | 22.13 m | 22.18 m | |
| SW Ballast 19S | 728.8 | 1.025 | 1% T / KML = | 26.80 m | 27.20 m | |
| SW Ballast 20P | 768.2 | 1.025 | 1% T / GML = | 4.67 m | 5.02 m | |
| SW Ballast 20S | 768.2 | 1.025 | 92% | | | |
| SW Ballast 21P | 963.7 | 1.025 | 1% ability Margin | | | |
| SW Ballast 21S | 963.7 | 1.025 | 1% | | | |
| SW Ballast 22P | 1067.3 | 1.025 | 1% allowable VCG = | 23.04 m | | |
| SW Ballast 22S | 1067.3 | 1.025 | 1% ability Margin = | 0.86 m | | |
| SW Ballast 23P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 24P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1% | | | |
| SW Ballast 25P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 26P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 26S | 980.8 | 1.025 | 1% | | | |
| SW Ballast Total | | | | | | |

Righting Arm & Overturning Arm Curve



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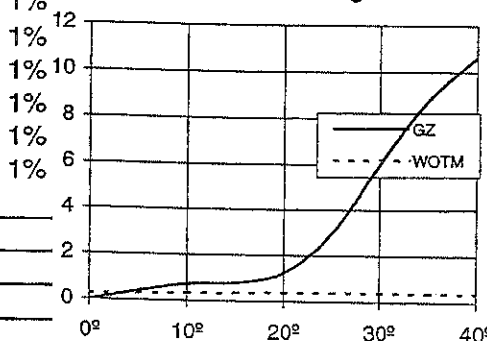
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| Sea Water Ballast Tanks | Max Vol.
m³ | Density
t/m³ | % CG
om CL | VCG
m | FSC _T
m | FSC _L
m |
|-------------------------|----------------|-----------------|-------------------|----------|-----------------------|-----------------------|
| SW Ballast 1P | 886.7 | 1.025 | 99%0.3 | 29.7 | 0.000 | 0.000 |
| SW Ballast 1S | 886.7 | 1.025 | 99%0.0 | 4.4 | 0.000 | 0.000 |
| SW Ballast 2P | 877.6 | 1.025 | 99%0.2 | 26.4 | 0.000 | 0.000 |
| SW Ballast 2S | 877.6 | 1.025 | 99%0.0 | 5.1 | 0.000 | 0.000 |
| SW Ballast 3P | 728.7 | 1.025 | 11%3.5 | 39.0 | 0.000 | 0.000 |
| SW Ballast 3S | 728.7 | 1.025 | 1%3.1 | 40.6 | 0.000 | 0.000 |
| SW Ballast 4P | 798.3 | 1.025 | 99%0.1 | 27.7 | 0.000 | 0.001 |
| SW Ballast 4S | 798.3 | 1.025 | 99%3.3 | 42.1 | 0.000 | 0.000 |
| SW Ballast 5P | 256.6 | 1.025 | 1%4.3 | 37.7 | 0.000 | 0.000 |
| SW Ballast 5S | 256.6 | 1.025 | 1%3.2 | 41.0 | 0.000 | 0.000 |
| SW Ballast 6P | 523.9 | 1.025 | 1%3.5 | 43.9 | 0.000 | 0.000 |
| SW Ballast 6S | 523.9 | 1.025 | 50%5.2 | 43.0 | 0.000 | 0.000 |
| SW Ballast 7P | 555.2 | 1.025 | 99%1.7 | 43.7 | 0.004 | 0.013 |
| SW Ballast 7S | 555.2 | 1.025 | 1%4.1 | 18.3 | - | - |
| SW Ballast 11P | 644.7 | 1.025 | 99%0.0 | 9.8 | - | - |
| SW Ballast 11S | 644.7 | 1.025 | 99%2.8 | 15.1 | - | - |
| SW Ballast 13P | 644.7 | 1.025 | 99%0.0 | 0.0 | 0.000 | 0.000 |
| SW Ballast 13S | 644.7 | 1.025 | 99%0.0 | 0.0 | - | - |
| SW Ballast 16P | 249.7 | 1.025 | 1%3.4 | 5.34 | 0.007 | 0.055 |
| SW Ballast 16S | 249.7 | 1.025 | 1% | | | |
| SW Ballast 17P | 523.9 | 1.025 | 38%0.25 | 22.07 | 0.012 | 0.069 |
| SW Ballast 17S | 523.9 | 1.025 | 1% | | | |
| SW Ballast 18P | 555.2 | 1.025 | 99%ical Stability | | | |
| SW Ballast 18S | 555.2 | 1.025 | 99% | | | |
| SW Ballast 19P | 728.8 | 1.025 | 1%ected VCG = | 22.08 m | 22.14 m | |
| SW Ballast 19S | 728.8 | 1.025 | 1% / KML = | 26.80 m | 27.20 m | |
| SW Ballast 20P | 768.2 | 1.025 | 1% / GML = | 4.72 m | 5.06 m | |
| SW Ballast 20S | 768.2 | 1.025 | 89% | | | |
| SW Ballast 21P | 963.7 | 1.025 | 1%ility Margin | | | |
| SW Ballast 21S | 963.7 | 1.025 | 1% | | | |
| SW Ballast 22P | 1067.3 | 1.025 | 1%wable VCG = | 23.04 m | | |
| SW Ballast 22S | 1067.3 | 1.025 | 1%ility Margin = | 0.90 m | | |
| SW Ballast 23P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 23S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 24P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 24S | 980.8 | 1.025 | 1% | | | |
| SW Ballast 25P | 665.6 | 1.025 | 1% | | | |
| SW Ballast 25S | 665.6 | 1.025 | 1% | | | |
| SW Ballast 26P | 980.8 | 1.025 | 1% | | | |
| SW Ballast 26S | 980.8 | 1.025 | 1% | | | |
| SW Ballast Total | | | | | | |
| | BY | | | | | |
| Prepared | | | | | | |
| Checked | | | | | | |

Righting Arm & Overturning Arm Curve



7.15 INCLINING TEST REPORT AND LIGHTSHIP DETERMINATION

INCLINING TEST REPORT AND LIGHTSHIP DETERMINATION

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Contract No: 7/15/2151

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Deadweight Survey and Inclining Test

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| Issue
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REVISION CHANGE NOTICES

| Rev. | Location Changes | Brief Description of Change |
|------|------------------|-----------------------------|
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2. INTRODUCTION
3. REFERENCES
4. PREPARATIONS FOR THE INCLINING TEST
5. RESULTS
6. CONCLUSIONS AND QUALIFICATIONS

Appendix A Deadweight Survey

Appendix B Inclining Test Readings – Drafts, Pendulums, Wind & Mooring Tensions

Appendix C Determination of Metacentric Height and Lightship Characteristics

Appendix D Stability Loading Conditions for the Petrobras 36

Appendix E Explanation of Wind Correction Calculations

Appendix F Site Calculations

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1. SUMMARY

This document reports the results of the Inclining Test performed for the Petrobras-36 FPU. The Inclining Test was carried out in accordance with the Inclining Test Procedure (ref. 4) in the Baie Des Sept Îles, Canada on the 17th October 1999. The unit was moored in a sheltered location and ballasted down to a draft of 18.94m where the displacement of the rig was calculated at 51820.4 metric tonnes. The deadweight survey was completed and the inclining test was then performed with environmental forces almost negligible.

The Inclination Test was performed using concrete weights moved longitudinally over the deck of the Unit. A total of eight shifts were made and the moment-tangent plots (appendix C) clearly showed that accurate results had been obtained.

The results were analysed both without and with a correction for the wind conditions recorded at the time. Statistical analysis indicates that when the inclining moments are corrected for wind effects a slightly better trend line is obtained. The GM_{fluid} , calculated from the gradient of the moment-tangent plot, is 6.87m. The resulting lightship weight and centre of gravity have been calculated as:

| | |
|----------------|----------------|
| Lightship | 31164.5 Tonnes |
| LCG (Fr. Fpp) | 60.62 Metres |
| TCG (+ve stbd) | -0.30 Metres |
| VCG (Fr. USK) | 29.67 Metres |

A review of the operational stability of the Unit indicates all stability margins have increased to the following values:

| Condition | Draft (m) | Δ (tonnes) | VCG (m) | Allow VCG (m) | Margin (m) |
|---------------------|-----------|-------------------|---------|---------------|------------|
| Operating | 22.0 | 56503 | 22.18 | 23.04 | 0.86 |
| Fairlead Inspection | 18.0 | 50389 | 24.18 | 25.23 | 1.05 |
| Transit | 11.0 | 37083 | 27.06 | 44.90 | 17.84 |

2. INTRODUCTION

The semi-submersible FPU P36 (thereinafter referred to as the Unit) is being upgraded for production duties offshore Brazil in the Roncador Field.

Modifications to the platform are in excess of 8000 tonnes; therefore an inclining test has been performed in order to calculate the new lightship weight and centre of gravity of the unit.

3. REFERENCES

| No | Title | Rev | Document No. |
|----|--|-----|--------------------------------|
| 1 | RINa – Rules for the construction and classification of MODU's | | Effective from January 1997 |
| 2 | Fincantieri – Inclining Test Report & Lightship Determination | | BKLT.MC/CAL N.201 |
| 3 | Principles of Naval Architecture | | SNAME |
| 4 | Inclining Test Procedure | A | ET-3010.38-1320-974-NBD-943 |
| 5 | Sounding Tables | O | RL-3010.38-1320-941-NBD-658-01 |
| 6 | Stability Analysis | B | RL-3010.38-1320-960-NBD-908 |
| 7 | Force and Motion Analysis | D | RL-3010.38-1320-960-NBD-906 |
| 8 | Weight Control Report | V | RL-3010.38-1320-915-NBD-903 |

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4. PREPARATIONS FOR THE INCLINING TEST

Deadweight Survey

A deadweight survey was carried out by Davie Industries (Appendix A) to determine all items not part of the Unit lightship and all items of the lightship not yet installed.

The survey was carried out and summarised in four parts:

1. Solid Deductions

Items which are not part of the lightship or which are not yet installed in their correct position, in particular stores and spares being shipped to Brazil, pipe spools not yet installed etc.

2. Solid additions

Items which are not on board but will be installed prior to the unit commencing operations and items which need to be relocated to their final location, in particular electric cable, pipe spools, etc.

3. Liquid deductions

Variable liquid weights including seawater ballast, fuel oil, potable water, etc.

4. Liquid additions

Liquids in equipment or pipework that are part of the lightship but were not present at the time of the survey.

Particular attention was paid to the following areas:

- a. Pipe spools that were fabricated but not installed were stored close to their final location, thereby requiring only a modification to the pipe spool's centre of gravity.
- b. For electrical cables not installed, their weight and centre of gravity were calculated from the relevant work packs. All electrical cable drums stored onboard were treated as deadweight items.
- c. For work packs identified up to the 8th October 1999, which contained material not installed by Davie Industries, material takeoffs were carried out, and additions made to the deadweight survey.
- d. All inclining weights and supporting timbers were weighed with a calibrated scale and witnessed. Report sheet in Appendix A.
- e. A detailed inventory of all stores and spares onboard was made, all items were considered as deadweight since no permanent spares list existed at the time of the survey.
- f. All Ansell Jones marine equipment, sea chest covers and other permanent marine items were considered as part of the lightship with their permanent stowage location as the Marine Store (situated on the main deck).

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- g. A detailed inventory of fittings and pipe insulation for the Process Gas Modules (PGM's) was made, and the final weight distributed evenly between the three packages.
- h. All tanks containing liquid were sounded prior to the inclining test taking place. After completion of the inclining test the seawater ballast tanks, fuel oil tanks and potable water tanks were re-sounded in order to ensure no significant changes had occurred.

Inclining Equipment and Data Recording

The inclination of the Unit was carried out using 22 prefabricated concrete weights of approximately 8 tonnes each. Prior to being placed onboard each weight was repaired, reinforced with a steel jacket, painted and then weighed with a calibrated scale. The weighing certificates are attached in Appendix A.

Six draft reading devices were positioned around the rig, four on the forward/aft ends of the fairlead boxes and two (one port & one starboard) on the central caisson. The scales were permanently attached, requiring only that a damping tube be positioned alongside in order to read the draft.

The Unit had four anemometers to record wind speeds; two were located on the forward end of the platform above the main deck and one located on each of the cranes. Each recorded the wind speed in metres per second and the two above the main deck also recorded the direction.

Prior to commencing the inclining test the mooring lines were slackened so that they hung vertically down, therefore only the weight of the chain needed to be considered in the deadweight survey. During the inclining test the mooring tensions were recorded in order to ensure that there was no change in the external load the lines were applying to the Unit.

The inclinations were recorded at three stations using pendulums, damped in an oil bath. A backup inclinometer was prepared in case of emergency. An additional pendulum and an inclinometer were available to check for any changes to the heel. Pendulum motions were recorded approximately 10 minutes after the weight shift was finished, ten oscillations were recorded and the mean taken.

Inclining Test

Personnel from Davie Industries (Davie) carried out the inclining test. All readings were reported to Noble Denton Europe Limited (NDE) for analysis and checking. Representatives of Petromec, Brasoil and RINa witnessed and accepted the results of the Inclining Test.

A set of preliminary calculations and results were prepared and signed by all parties onboard at the completion of the inclining test (see appendix F). Minor corrections have been made in this report following a review of the site calculations.

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5. RESULTS

Draft Mark Readings and Unit Displacement

Upon completion of the ballasting operations, the draft readings were taken and used to compute the displacement of the Unit. One set of draft readings was taken before the inclining test commenced and another after the fourth shift had been completed. Due to small wavelets during the first set of readings they have been discarded in favour of using the draft readings made during after the fourth weight shift when near flat water conditions were observed.

The calculation to determine the Unit displacement is contained in Appendix C (pages 2 & 3). The displacement as calculated using the second set of data and the associated hydrostatic properties for this displacement are shown in the table 5-1 below.

| DRAFT | DISPL. | LCB | TCB | VCB | WPA | LCF | TCF | KM _T | KM _L |
|-------|----------|-------|-------|------|-------------------|-------|-------|-----------------|-----------------|
| (m) | (tonnes) | (m) | (m) | (m) | (m ²) | (m) | (m) | (m) | (m) |
| 18.94 | 51820.4 | -0.72 | -0.02 | 7.92 | 1485.1 | -0.04 | -0.04 | 27.30 | 27.80 |

Table 5-1 Petrobras 36 Draft and Hydrostatic Properties during the Inclining Test

Deadweight Survey

The deadweight survey was carried out as described in section 4. The following results were obtained, note – negative values are deductions, positive values are additions

| Description | Weight
(Tonnes) | LCG
(m) | TCG
(m) | VCG
(m) | I _{trans}
(m ⁴) | I _{long}
(m ⁴) |
|-------------------|--------------------|------------|------------|------------|---|--|
| SW Ballast | -19269.20 | 51.15 | 0.71 | 5.74 | 3444.6 | 10976.1 |
| Oils | -261.20 | 75.91 | -4.67 | 38.11 | 525.4 | 227.2 |
| PW, Misc. Liquids | -311.20 | 84.31 | 0.67 | 25.74 | 127.8 | 575.3 |
| Packages | -16.20 | 89.71 | -5.45 | 49.25 | 0.0 | 0.0 |
| Liquid Additions | 50.53 | 72.67 | 9.06 | 42.38 | 0.0 | 0.0 |
| Solid Deductions | -941.83 | 49.98 | -4.18 | 27.45 | 0.0 | 0.0 |
| Solid Additions | 93.23 | 71.32 | 2.54 | 52.32 | 0.0 | 0.0 |

Table 5-2 Results of Deadweight Survey of Petrobras 36

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Determination of GM_{fluid}

From the pendulum readings for each shift the heel angle (as a tangent) can be calculated. This value can then be used with the known moment causing the angle to calculate the GM_{fluid} value as shown in the formula below.

$$GM_{fluid} = \frac{w.d}{\Delta \tan \phi}$$

where:

w = weight moved across deck

d = distance of weight shift

Δ = Unit displacement

ϕ = angle of heel

It is however more accurate to plot the moments ($w.d$) against the tangents ($\tan \phi$) and compute the GM from the best-fit trend line.

Equation 5-1 is however only true if there are no other external forces causing a change in the heel angle, for instance the effects of wind and current or a change in mooring line tensions might need to be considered.

Wind speeds and mooring line tensions during the inclining test were monitored and recorded during the actual pendulum reading stage. The readings are contained in Appendix B. No significant change was recorded in the mooring tensions, however the wind speed and direction varied during the inclining test.

To account for the wind effect of the inclining test, the longitudinal wind force coefficients were extracted from the Force and Motion Analysis (ref. 7). Since the transverse coefficients do not effect the trim angle during the inclining test they can be ignored. A mean wind speed and direction was computed for each weight shift and the longitudinal wind overturning moment computed. This value can then be used to correct the weight shift moment. For a more detailed explanation of this calculation see Appendix E.

Once a corrected moment has been calculated the moment-tangent plot can be created and the resultant trend line applied. Using Excel 97 a plot is created and the trend line fitted. Excel also records the R^2 correlation value giving an indication of the consistency of the results. The moment tangent plot with a correction for wind is shown overleaf.

From the moment tangent plot trend line the GM_{fluid} is calculated as:

$$GM_{fluid} = \frac{12000}{0.03372 \times 51820.4} = 6.87 \text{ metres}$$

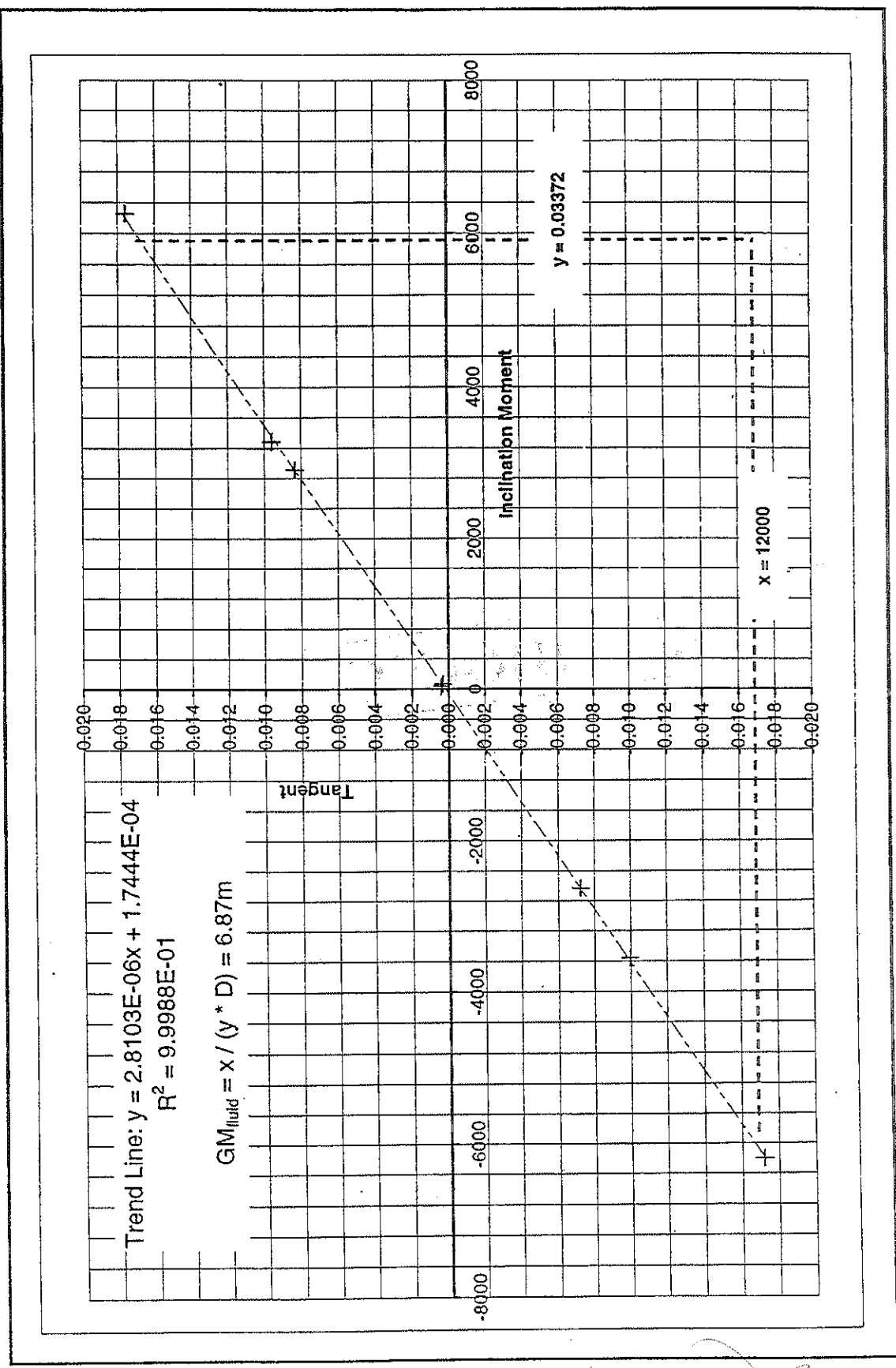
$$\text{Correlation value } R^2 = 0.99988$$

Note that a correlation value this close to 1.00 indicates that very good consistency has been achieved during the test, however, good correlation may only show that the errors have been consistent.

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Moment - Tangent Plot for Inclining Test of Petrobras 36 (with Wind Corrections)



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Determination of Lightship Weight and Centre of Gravity

With the completion of the deadweight survey and inclining test the lightship Weight and centre of gravity can be accurately calculated. Appendix C contains the details of the calculations. The weight and centre of gravity of the unit is calculated as follows:

The vertical centre of gravity is calculated by correcting the GM_{fluid} for free surface and then subtracting this value from the metacentre height i.e.

$$KG = KM_L - (GM_{fluid} + fsc)$$

The longitudinal and transverse centres of gravity are calculated from the trim and heel of the Unit from which the centre of gravity relative to the centre of buoyancy can be computed.

$$LCG = LCB + [(KM_L - BG) \times t] \text{ where } t = \text{layer correction}$$

$$TCG = TCB + \tan \theta_{heel} \times \left[\left(BM_T - \frac{FS}{\Delta} \right) - BG \right]$$

The lightship weight is calculated by summing the calculated displacement and the deadweight deductions and additions.

Based on the above results the calculated displacement and centre of gravity of the rig during the inclining test is shown in the table below along with the computed lightship weight of the Petrobras 36.

| Description | Weight
(Tonnes) | LCG
(m) | TCG
(m) | VCG
(m) | I _{trans}
(m ⁴) | I _{long}
(m ⁴) |
|---------------------------------------|--------------------|------------|------------|------------|---|--|
| Displacement During
Inclining Test | 51820.40 | 57.10 | -0.02 | 20.70 | 4097.8 | 11778.6 |
| Calculated Lightship | 31164.53 | 60.621 | -0.296 | 29.669 | 0.0 | 0.0 |

Table 5-3 Displacement during Inclining Test
and Calculated Lightship of Petrobras 36

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6. CONCLUSIONS AND QUALIFICATIONS

The lightship weight calculated falls within the net weight and factored weight reported in the final Weight Control Report (Ref. 8). From table 6-1 below it can be seen that the inclined weight was 345 tonnes less than WCR rev. V, and 560 tonnes less than the original predicted lightship (it should be noted that the original weight report had no weight values for the riser decks or any SCR equipment – significant weights).

| Report No. | Dry Weight*
(tonnes) | LCG
(m) | TCG
(m) | VCG
(m) |
|---------------------|-------------------------|------------|------------|------------|
| Report O (Original) | 31725.3 | 61.51 | 0.43 | 30.19 |
| Report V (Current) | 31421.4 | 60.83 | 0.20 | 30.07 |
| Inclined Lightship | 31164.5 | 60.62 | -0.30 | 29.67 |

Table 6-1 Predicted Lightship and Inclined Lightship

The longitudinal centre of gravity has moved forward from the last WCR, and the vertical centre of gravity has decreased. Both the inclined values improve the stability margins calculated in Appendix D. The transverse centre of gravity was considerably adrift from its WCR predicted position. It was known throughout the construction phase that the TCG was always located on the portside of the Unit not the starboard as predicted by the WCR. It is assumed that the error occurs in the reporting of the removed items where it was known that COG values were not accurately recorded.

The Inclining Test was performed systematically and accurately by all parties involved. The deadweight survey and the inclining test can be considered to give an accurate lightship weight when the Unit completes construction.

However in order to ensure that another deadweight survey and/or an inclining test is not required prior to final classification the following should be noted:

1. As each work pack is completed the final weight should be noted and marked against the calculated value. If there is a significant difference, this should be noted in a lightship modification form.
2. An unknown number of workpacks were to be issued by Davie Industries after the 8th October 1999, no estimate was included in the deadweight survey for these and they should be monitored during the final construction stage in Brazil and a lightship modification made as necessary.
3. Any other changes made to the Unit not recorded in this report will require a lightship modification to be made.

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JOSE CARLOS FILANTE GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

153/

Appendix A

Deadweight Survey

[Faint, illegible handwritten notes]

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JOSE CARLOS FERNANDES JR.
DIRETOR
DIVISÃO DE SERVIÇOS GERAIS



**SEMI-SUBMERSIBLE PRODUCTION PLATFORM
PETROBRAS-36**

**DEADWEIGHT SURVEY
REPORT
FOR INCLINING EXPERIMENT**

PREPARED BY: DAVIE Industries Inc.
DATE: 99-10-15

É CÓPIA DO DOCUMENTO ORIGINAL
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS



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JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CANTOARIAS

GENERAL:

The purpose of this Survey is to establish the weight condition of the semi-submersible production platform after completion of the major refitting work done at Davie Industries inc. This condition reflects the weight status of the platform for the Inclining Experiment.

NOTE:

In the Deadweight Survey Report, items that have their description in *italic* are "Lightship Items" that are not in their final position. They are deducted from their temporary store position and then added to their final position.

REFERENCE AXIS:

Longitudinal Center of Gravity are given from Frame 0 (F.P.) and are positive in aft direction.
Tranversal Center of Gravity are given from Center Line (C.L.) and are positive starboard side of the C.L.
Vertical Center of Gravity are given from Base Line (B.L.) and are positive in the upward direction.

WORKPACKS:

Any workpacks issued by Davie Industries or MIL Systems inc. after the 8th October 1999 have not been included within this report.

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**Solid Weight For Deduction
Summary**

| Description | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------------------------|----------------|-------------------------|-------------------------|-------------------------|
| Pontoons | 1345 | 67.316 | -10.826 | 8.749 |
| Columns | 730 | 80.772 | 0.370 | 30.956 |
| Central Caisson & Bracings | 1149 | 31.788 | -3.172 | 12.953 |
| Spider Deck | 4629 | 42.340 | -8.189 | 29.820 |
| Inner Bottom | 0 | 0.000 | 0.000 | 0.000 |
| Tank Top | 116711 | 74.355 | 3.002 | 37.338 |
| Second Deck | 21223 | 64.017 | -4.656 | 40.376 |
| Main Deck | 356912 | 58.860 | 2.595 | 44.148 |
| Upper Deck | 0 | 0.000 | 0.000 | 0.000 |
| Chain Lockers & Mooring Lines | 439134 | 35.639 | -11.521 | 10.685 |

| | | | | |
|---|---------------|---------------|---------------|---------------|
| Total Solid Weight For Deduction | 941833 | 49.984 | -4.180 | 27.448 |
|---|---------------|---------------|---------------|---------------|

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

**Solid Weight For Deduction
Pontoon**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

PORT PONTOON: (AFT)

THRUSTER ROOM:
NO DEDUCTION

THRUSTER ROOM (MEZZANINE):
NO DEDUCTION

| | | | | |
|--|-----|--------|---------|-------|
| S.W. PUMP ROOM:
BLEU STAINER NO.XA414B | 500 | 88.000 | -29.000 | 4.070 |
|--|-----|--------|---------|-------|

UPPER PUMP ROOM (MEZZANINE):
NO DEDUCTION

WATER INJ. EQUIP. ROOM:
NO DEDUCTION

ACCESS TRUNK :
NO DEDUCTION

PORT PONTOON: (FWD)

WATER INJ. EQUIP. ROOM:
NO DEDUCTION

| | | | | |
|--|----|--------|---------|-------|
| S.W. PUMP ROOM:
GAS CYLINDER | 25 | 28.000 | -26.432 | 3.070 |
|--|----|--------|---------|-------|

UPPER PUMP ROOM (MEZZANINE):
NO DEDUCTION

THRUSTER ROOM:
NO DEDUCTION

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

**Solid Weight For Deduction
Pontoons**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

THRUSTER ROOM (MEZZANINE):
NO DEDUCTION

PORT PONTOON: (VOID SPACES)

VOID SPACE NO.27:
NO DEDUCTION

VOID SPACE NO.28:
NO DEDUCTION

VOID SPACE NO.50:
NO DEDUCTION

VOID SPACE NO.51:
NO DEDUCTION

VOID SPACE NO.61:
NO DEDUCTION

STARBOARD PONTOON: (AFT)

THRUSTER ROOM:
NO DEDUCTION

THRUSTER ROOM (MEZZANINE):
NO DEDUCTION

S.W. PUMP ROOM:
NO DEDUCTION

UPPER PUMP ROOM (MEZZANINE):
NO DEDUCTION

É Cópia do Documento Original



**Solid Weight For Deduction
Pontoons**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

WATER INJ. EQUIP. ROOM:
NO DEDUCTION

ACCESS TRUNK:
NO DEDUCTION

STARBOARD PONTOON: (FWD)

| | | | | |
|--------------------------------|----|--------|--------|-------|
| WATER INJ. EQUIP. ROOM: | | | | |
| MANHOLE | 20 | 36.000 | 30.000 | 2.770 |

S.W. PUMP ROOM:
NO DEDUCTION

UPPER PUMP ROOM (MEZZANINE):
NO DEDUCTION

THRUSTER ROOM:
NO DEDUCTION

THRUSTER ROOM (MEZZANINE):
NO DEDUCTION

STARBOARD PONTOON: (VOID SPACES)

VOID SPACE NO.27:
NO DEDUCTION

VOID SPACE NO.28:
NO DEDUCTION

VOID SPACE NO.50:
NO DEDUCTION

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

| Description | Compartment Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |
|-------------|--------------------|-------------|-------------------|-------------------|-------------------|
|-------------|--------------------|-------------|-------------------|-------------------|-------------------|

**VOID SPACE NO.51:
NO DEDUCTION**

**VOID SPACE NO.61:
NO DEDUCTION**

EXTERIOR ZONES:

| | | | | |
|--------------------------------|-----|--------|-------|--------|
| HARBOR TUG WIRES 15m LONG. (4) | 800 | 56.400 | 0.000 | 12.000 |
|--------------------------------|-----|--------|-------|--------|

| | | | | |
|----------------|------|--------|---------|-------|
| Total pontoons | 1345 | 67.316 | -10.826 | 8.749 |
|----------------|------|--------|---------|-------|

SECRET

JOSE CARLOS PINHEIRO GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

| | | | | | |
|--|-----------------|---|-------------------|---|-------------------|
| <div>INDUSTRIES</div> <div>DAVIE</div> <div></div> | | <div>Petrobras - 36</div> <div>Inclining Test</div> | | <div></div> <div>NOBLE DENTON</div> | |
| <div>Solid Weight For Deduction Columns</div> | | | | | |
| Description | Compart. Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |

COLUMN PORT AFT:

DEARATOR TWR/DRAINS ST. PP ROOM:
FILTER BAGS (36)

360 80.772 -27.000 30.956

STAIR CASING:
NO DEDUCTION

VOID SPACE NO.30:
NO DEDUCTION

VOID SPACE NO.30A:
NO DEDUCTION

VOID SPACE NO.31:
NO DEDUCTION

VOID SPACE NO.33 PORT1:
NO DEDUCTION

VOID SPACE NO.33 PORT2:
NO DEDUCTION

VOID SPACE NO.45:
NO DEDUCTION

VOID SPACE NO.45A:
NO DEDUCTION

VOID SPACE NO.63:
NO DEDUCTION

VOID SPACE NO.65:
NO DEDUCTION

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DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

1263

| | | | | | |
|--|-----------------|---|-------------------|---|-------------------|
| <div>INDUSTRIES</div> <div>DAVIE</div> <div></div> | | <div>Petrobras - 36</div> <div>Inclining Test</div> | | <div></div> <div>NOBLE DENTON</div> | |
| <div>Solid Weight For Deduction Columns</div> | | | | | |
| Description | Compart. Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |

ELEVATOR TRUNK:
PENDULUM BATH & OIL
CHAIRS (2)
PENDULUM

COLUMN PORT FWD:

"P" TANKS +SEA. TREAT. UNIT ROOM:
NO DEDUCTION

STAIR CASING:
NO DEDUCTION

VOID SPACE NO.29:
NO DEDUCTION

VOID SPACE NO.29A:
NO DEDUCTION

VOID SPACE NO.32 PORT1:
NO DEDUCTION

VOID SPACE NO.32 PORT2:
NO DEDUCTION

VOID SPACE NO.32 PORT3:
NO DEDUCTION

VOID SPACE NO.46:
NO DEDUCTION

VOID SPACE NO.46A:
NO DEDUCTION

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS



**Solid Weight For Deduction
Columns**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

VOID SPACE NO.62:
NO DEDUCTION

VOID SPACE NO.64:
NO DEDUCTION

ELEVATOR TRUNK:
NO DEDUCTION

COLUMN STARBOARD AFT:

| | | | | |
|---|-----|--------|--------|--------|
| DEARATOR TWR/DRAINS ST. PP ROOM: | | | | |
| FILTER BAGS (37) | 370 | 80.772 | 27.000 | 30.956 |

STAIR CASING:
NO DEDUCTION

VOID SPACE NO.30:
NO DEDUCTION

VOID SPACE NO.30A:
NO DEDUCTION

VOID SPACE NO.31:
NO DEDUCTION

VOID SPACE NO.33 STBD1:
NO DEDUCTION

VOID SPACE NO.33 STBD2:
NO DEDUCTION

VOID SPACE NO.45:

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JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Solid Weight For Deduction
Columns

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

NO DEDUCTION

VOID SPACE NO.45A:
NO DEDUCTIONVOID SPACE NO.63:
NO DEDUCTIONVOID SPACE NO.65:
NO DEDUCTIONELEVATOR TRUNK:
NO DEDUCTIONCOLUMN STARBOARD FWD:"P" TANKS +SEA. TREAT. UNIT ROOM:
NO DEDUCTIONSTAIR CASING:
NO DEDUCTIONVOID SPACE NO.29:
NO DEDUCTIONVOID SPACE NO.29A:
NO DEDUCTIONVOID SPACE NO.32 STBD1:
NO DEDUCTIONVOID SPACE NO.32 STBD2:
NO DEDUCTION

RECUPÉL DO DOCUMENTO ORIGINAL

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



**Solid Weight For Deduction
Columns**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

VOID SPACE NO.32 STBD3:
NO DEDUCTION

VOID SPACE NO.46:
NO DEDUCTION

VOID SPACE NO.46A:
NO DEDUCTION

VOID SPACE NO.62:
NO DEDUCTION

VOID SPACE NO.64:
NO DEDUCTION

ELEVATOR TRUNK:
PENDULUM BATH & OIL
CHAIRS (2)
PENDULUM

| | | | | | |
|----------------------|--|------------|---------------|--------------|---------------|
| Total Columns | | 730 | 80.772 | 0.370 | 30.956 |
|----------------------|--|------------|---------------|--------------|---------------|

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Solid Weight For Deduction
Central Caisson & Bracings

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

CENTRAL CAISSON:**VOID SPACE NO.34:**

NO DEDUCTION

VOID SPACE NO.35:

NO DEDUCTION

VOID SPACE NO.36:

NO DEDUCTION

VOID SPACE NO.56:

NO DEDUCTION

VOID SPACE NO.57:

| | | | | |
|----------------------------|-----|--------|-------|--------|
| PENDULUM BATH & OIL | 174 | 46.720 | 0.000 | 14.216 |
| CHAIRS (2) | 16 | 46.720 | 0.000 | 14.216 |
| PENDULUMS (2) | 12 | 46.720 | 0.000 | 32.216 |
| LEVELING STATION & TRIPODE | 50 | 46.720 | 0.000 | 14.216 |
| CLINOMETERS (2) | 12 | 46.720 | 0.000 | 14.216 |
| LIGHTING | 15 | 46.720 | 0.000 | 14.216 |

VOID SPACE NO.60:

NO DEDUCTION

BRACINGS:**VOID SPACE NO.52 PORT:**

NO DEDUCTION

VOID SPACE NO.52 STBD:

NO DEDUCTION

VOID SPACE NO.53 PORT:

NO DEDUCTION

VOID SPACE NO.53 STBD:

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

**Solid Weight For Deduction
Central Caisson & Bracings**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

NO DEDUCTION

VOID SPACE NO.54:
NO DEDUCTION

VOID SPACE NO.55:
NO DEDUCTION

VOID SPACE NO.58 PORT:
NO DEDUCTION

VOID SPACE NO.58 STBD:
NO DEDUCTION

VOID SPACE NO.59 PORT:
NO DEDUCTION

VOID SPACE NO.59 STBD:
NO DEDUCTION

EXTERIOR ZONES:

VOID SPACE NO.55, FWD BRACING:

| | | | | |
|------------|-----|--------|---------|--------|
| SPOOL ENDS | 100 | 27.000 | -16.500 | 12.300 |
| SPOOL ENDS | 100 | 27.000 | -13.500 | 12.300 |
| SPOOL ENDS | 190 | 27.000 | -14.500 | 12.300 |
| SPOOL ENDS | 190 | 27.000 | -11.500 | 12.300 |
| SPOOL ENDS | 100 | 27.000 | 13.500 | 12.300 |
| SPOOL ENDS | 190 | 27.000 | 15.500 | 12.300 |

| | | | | |
|---|-------------|---------------|---------------|---------------|
| Total Central Caisson & Bracings | 1149 | 31.788 | -3.172 | 12.953 |
|---|-------------|---------------|---------------|---------------|

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DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS


Solid Weight For Deduction
Spider Deck

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

ZONE R1 (FWD PORT QUADRANT):

| | | | | | |
|-----------------------------|--|-----|--------|---------|--------|
| SCR OIL RO1 | | 657 | 53.600 | -13.300 | 29.850 |
| SCR GAZ RG1 | | 872 | 53.600 | -13.300 | 29.850 |
| PLYWOOD (2'x8'x2) | | 26 | 53.600 | -13.200 | 29.750 |
| SPOOL | | 294 | 24.000 | -14.800 | 29.350 |
| SPOOL | | 294 | 24.400 | -14.800 | 29.350 |
| SPOOL | | 488 | 23.400 | -14.000 | 29.350 |
| SPOOL | | 488 | 23.600 | -14.300 | 29.350 |
| PLYWOOD (2"x2") AND LASHING | | 25 | 23.750 | -14.500 | 29.150 |

ZONE R2 (FWD STBD QUADRANT):

| | | | | | |
|-------------------|--|-----|--------|--------|--------|
| SPOOL | | 294 | 23.300 | 16.000 | 29.350 |
| SPOOL | | 488 | 23.800 | 15.400 | 29.350 |
| PLYWOOD (2'x2'x3) | | 10 | 23.500 | 15.700 | 29.250 |
| SHACKLE DAMAGED | | 20 | 30.400 | 20.000 | 32.040 |

ZONE R3 (AFT PORT QUADRANT):

| | | | | | |
|----------------------------------|--|-----|--------|---------|--------|
| SUPPORT 1780-M11-113 | | 94 | 78.000 | -17.800 | 32.350 |
| PLYWOOD (2'x2'x3) | | 10 | 78.000 | -17.800 | 31.750 |
| PLATE 815DAI., 20THK | | 84 | 78.000 | -18.000 | 32.150 |
| SUPPORT178PS141 | | 123 | 89.600 | -20.300 | 32.300 |
| PIPE | | 193 | 87.400 | -9.700 | 29.850 |
| PLYWOOD (2'x8') | | 13 | 87.400 | -9.700 | 29.750 |
| VALVE WITH EXPANDLE FOR PROD. C. | | 50 | 62.500 | -12.500 | 30.650 |
| SHACKEL DAMAGE | | 20 | 82.400 | -20.000 | 32.004 |

ZONE R4 (AFT STBD QUADRANT):

| | | | | | |
|--------------|--|----|--------|--------|--------|
| SHACKLES (2) | | 87 | 82.400 | 20.000 | 32.004 |
|--------------|--|----|--------|--------|--------|

| | | | | | |
|--------------------------|--|-------------|---------------|---------------|---------------|
| Total Spider Deck | | 4629 | 42.340 | -8.189 | 29.820 |
|--------------------------|--|-------------|---------------|---------------|---------------|

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 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS



**Solid Weight For Deduction
Inner Bottom**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

VOID SPACE NO.37 PORT:
NO DEDUCTION

0 0.000 0.000 0.000

VOID SPACE NO.37 STBD:
NO DEDUCTION

VOID SPACE NO.38 PORT:
NO DEDUCTION

VOID SPACE NO.38 STBD:
NO DEDUCTION

VOID SPACE NO.39:
NO DEDUCTION

VOID SPACE NO.40:
NO DEDUCTION

VOID SPACE NO.41:
NO DEDUCTION

VOID SPACE NO.42 PORT:
NO DEDUCTION

VOID SPACE NO.42 STBD:
NO DEDUCTION

VOID SPACE NO.43:
NO DEDUCTION

VOID SPACE NO.44:
NO DEDUCTION

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JOSÉ CARLOS FIMMENTEL GUSMÃO
DIRETOR

| | | | | |
|---------------------------|---|-------|-------|-------|
| Total Inner Bottom | 0 | 0.000 | 0.000 | 0.000 |
|---------------------------|---|-------|-------|-------|

Solid Weight For Deduction
Tank Top

| Description | Compart. Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |
|-------------------------------------|-----------------|-------------|-------------------|-------------------|-------------------|
| MECH. STORE NO.1: | T5011 | | | | |
| BOLTS BASKETS | | 480 | 86.868 | -32.000 | 37.476 |
| BUCKET | | 25 | 86.868 | -32.000 | 37.476 |
| PRESSURISED CONTAINERS | | 45 | 86.868 | -32.000 | 37.476 |
| BLADES AND GRINDING DISKS | | 20 | 86.868 | -32.000 | 37.476 |
| VARIOUS | | 285 | 86.868 | -32.000 | 37.476 |
| MECH. STORE NO.2: | T5009 | | | | |
| MISCELLANEOUS ON SHELVES | | 390 | 80.772 | -33.000 | 37.576 |
| PIPES ON SHELVES | | 25 | 80.772 | -33.000 | 37.576 |
| GASKETS ON WALL | | 15 | 80.772 | -33.000 | 37.576 |
| PUMP ON FLOOR | | 50 | 80.772 | -33.000 | 37.576 |
| PUMP ON FLOOR | | 120 | 80.772 | -33.000 | 37.576 |
| VARIOUS ON FLOOR | | 150 | 80.772 | -33.000 | 37.576 |
| MECH. WORKSHOP: | T5007 | | | | |
| OIL BARREL (1) & SPARE PARTS | | 125 | 85.344 | -24.000 | 37.476 |
| GASKETS | | 25 | 85.344 | -24.000 | 37.476 |
| OIL BUCKETS (2) | | 40 | 85.344 | -24.000 | 37.476 |
| MISCELLANEOUS MECH. PARTS | | 60 | 85.344 | -24.000 | 37.476 |
| PUMP (1) | | 20 | 85.344 | -24.000 | 37.476 |
| CORRIDOR : | T5015 | | | | |
| NO DEDUCTION | | | | | |
| STAIRS: | T5023 | | | | |
| NO DEDUCTION | | | | | |
| FIRE PUMP ROOM NO.1: | T5003 | | | | |
| NO DEDUCTION | | | | | |
| FRESHWATER PUMP ROOM (PORT): | T5005 | | | | |
| NO DEDUCTION | | | | | |
| AUXILIARY MACHINERY ROOM: | T5001 | | | | |
| NO DEDUCTION | | | | | |

É CÓPIA DO DOCUMENTO ORIGINAL
JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

**Solid Weight For Deduction
Tank Top**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

**AUXILIARY MACHINERY ROOM:
NO DEDUCTION**

T5002

ENGINE CONTROL ROOM:

T5027

| | | | | | |
|-------------------|--|-----|--------|---------|--------|
| FILE CABINETS (8) | | 600 | 24.628 | -24.000 | 37.326 |
| BINDERS (150) | | 225 | 24.628 | -24.000 | 37.326 |
| BOOK SELVE | | 264 | 24.628 | -24.000 | 37.326 |
| COMPUTERS (2) | | 50 | 24.628 | -24.000 | 37.326 |
| DECKS (12) | | 600 | 24.628 | -24.000 | 37.326 |
| DRAWING RACKS (4) | | 160 | 24.628 | -24.000 | 37.326 |
| CHAIRS (12) | | 72 | 24.628 | -24.000 | 37.326 |
| WATER FONTAINE | | 30 | 24.628 | -24.000 | 37.326 |

**F.O. PURIFIER & TANK ROOM:
NO DEDUCTION**

T5021

ELECTRICAL WORKSHOP:

T5017

| | | | | | |
|---------------------|--|-----|--------|--------|--------|
| FILE CABINETS (2) | | 150 | 75.438 | -8.000 | 37.476 |
| FRIGO | | 35 | 75.438 | -8.000 | 37.476 |
| DRAWING RACK (1) | | 45 | 75.438 | -8.000 | 37.476 |
| BOX (1) | | 35 | 75.438 | -8.000 | 37.476 |
| ELECTRIC CABLE | | 12 | 75.438 | -8.000 | 37.476 |
| ELECTRIC CABLE BLEU | | 15 | 75.438 | -8.000 | 37.476 |
| WATER FONTAIN | | 18 | 75.438 | -8.000 | 37.476 |
| VARIOUS | | 30 | 75.438 | -8.000 | 37.476 |

ELECT. STORAGE ROOM:

T5019

| | | | | | |
|--------------------|--|-----|--------|--------|--------|
| DOCUMENT BOXES (2) | | 160 | 69.342 | -5.500 | 37.576 |
| CLEANING | | 18 | 69.342 | -5.500 | 37.576 |
| TOOL BOXES (4) | | 195 | 69.342 | -5.500 | 37.576 |
| TRANSFORMERS (3) | | 60 | 69.342 | -5.500 | 37.576 |
| ELECTROD BOXES (6) | | 90 | 69.342 | -5.500 | 37.576 |
| VACUUM | | 10 | 69.342 | -5.500 | 37.576 |
| HOSES (3) | | 18 | 69.342 | -5.500 | 37.576 |
| ELECTRIC CABLE | | 60 | 69.342 | -5.500 | 37.576 |
| GARBAGE | | 125 | 69.342 | -5.500 | 37.576 |
| VARIOUS CLEANING | | 40 | 69.342 | -5.500 | 37.576 |

ELECT. STORE:

T5013

| | | | | | |
|---------------|--|----|--------|--------|--------|
| PLASTIC SHEET | | 50 | 75.438 | -8.000 | 37.576 |
|---------------|--|----|--------|--------|--------|

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JOSE CARLOS PINHEIRO GUSMÃO
DIRETOR
SERVIÇOS GERAIS

Solid Weight For Deduction
Tank Top

| Description | Compartment Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |
|------------------------------|--------------------|-------------|-------------------|-------------------|-------------------|
| BOXES (10) | | 100 | 75.438 | -1.000 | 37.576 |
| BOXES (3) | | 60 | 75.438 | -1.000 | 37.576 |
| COMPUTERS (2) | | 50 | 75.438 | -1.000 | 37.576 |
| PRINTERS (5) | | 150 | 75.438 | -1.000 | 37.576 |
| MISCELLANEOUS | | 50 | 75.438 | -1.000 | 37.576 |
| CONTENT IN GREY CABINET | | 985 | 75.438 | -1.000 | 37.576 |
| | | | | | |
| CORRIDOR: | T5025 | | | | |
| NO DEDUCTION | | | | | |
| | | | | | |
| CORRIDOR: | T5025A | | | | |
| NO DEDUCTION | | | | | |
| | | | | | |
| GENERATOR ROOM NO.1: | T3043 | | | | |
| OIL BARIL | | 178 | 59.436 | -33.000 | 38.226 |
| | | | | | |
| GENERATOR ROOM NO.2: | T3053 | | | | |
| OIL BARIL | | 178 | 36.576 | -33.000 | 38.226 |
| | | | | | |
| SWITCHBOARD ROOM NO.1: | T3035 | | | | |
| NO DEDUCTION | | | | | |
| | | | | | |
| SWITCHBOARD ROOM NO.2: | T3033 | | | | |
| NO DEDUCTION | | | | | |
| | | | | | |
| CORRIDOR: | T3031 | | | | |
| NO DEDUCTION | | | | | |
| | | | | | |
| PURIFIER ROOM: | T6004 | | | | |
| HOSE | | 60 | 79.248 | 8.000 | 38.000 |
| | | | | | |
| FRESHWATER PUMP ROOM (STBD): | T6006 | | | | |
| STEEL PLATE COVER | | 100 | 86.106 | 13.000 | 36.776 |
| | | | | | |
| FIRE PUMP ROOM NO.4: | T6008 | | | | |

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JOSE CARLOS PINHEIRO GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Solid Weight For Deduction
Tank Top

| Description | Compарт.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

NO DEDUCTION

CORRIDOR & STAIRS:
NO DEDUCTION

T6010

PRODUCTION WAREHOUSE NO.4:

T6012

| | | | | |
|---------------------------|-----|--------|--------|--------|
| BOLTS | 5 | 86.124 | 21.624 | 37.026 |
| FLANGE | 5 | 86.124 | 21.624 | 37.026 |
| PRESSURE PURGE TOOL | 20 | 86.124 | 21.624 | 37.026 |
| SIGHT GLASS | 20 | 86.124 | 21.624 | 37.476 |
| SIGHT GLASS | 5 | 86.124 | 21.624 | 37.476 |
| VARIOUS ELECTRICAL | 15 | 86.124 | 21.624 | 37.926 |
| PRESSURE TRANSMITER | 10 | 86.124 | 21.624 | 38.426 |
| BEARING BOXES (4) | 118 | 86.124 | 24.932 | 36.676 |
| BEARING PLATE | 18 | 86.124 | 24.932 | 36.676 |
| TRANSMITAL PRESSURE GAUGE | 16 | 86.124 | 24.932 | 37.026 |
| EQUIPMENT BOX | 18 | 86.124 | 24.932 | 37.026 |
| MECH. BOX | 8 | 86.124 | 24.932 | 37.026 |
| BOOT BOX | 4 | 86.124 | 24.932 | 37.026 |
| ALUMINIUM GASKET | 30 | 86.124 | 24.932 | 37.026 |
| BOLTS AND NUTS | 20 | 86.124 | 24.932 | 37.476 |
| PIPES AND FLANGES | 12 | 86.124 | 24.932 | 37.476 |
| BOLTS, NUTS AND WASHERS | 30 | 86.124 | 24.932 | 37.476 |
| BEARINGS | 20 | 86.124 | 24.932 | 37.926 |
| PRESSURE GAUGE | 3 | 86.124 | 24.932 | 37.926 |
| MECHANICAL BAG | 4 | 86.124 | 24.932 | 37.926 |
| U-BOLTS | 5 | 86.124 | 24.932 | 38.426 |
| NUTS | 16 | 86.124 | 24.932 | 38.426 |
| WOODEN BOX | 7 | 86.124 | 24.932 | 38.426 |
| WOODEN TOOL BOX (4) | 140 | 86.124 | 25.932 | 36.676 |
| BEARING | 35 | 86.124 | 25.932 | 37.026 |
| NUTS | 15 | 86.124 | 25.932 | 37.026 |
| TOOL BOX | 10 | 86.124 | 25.932 | 37.026 |
| ROD SHAFT | 30 | 86.124 | 25.932 | 37.476 |
| CARD BORD | 1 | 86.124 | 25.932 | 37.476 |
| BEARING BOXES | 25 | 86.124 | 25.932 | 37.476 |
| BLEU BOXES | 20 | 86.124 | 25.932 | 37.476 |
| BEARINGS | 35 | 86.124 | 25.932 | 37.926 |
| BOXES | 5 | 86.124 | 25.932 | 37.926 |
| SEALS | 30 | 86.124 | 25.932 | 38.426 |
| MECHANICAL SEALS | 70 | 88.024 | 27.032 | 36.676 |
| CASING STAINER | 11 | 88.024 | 27.032 | 36.676 |
| FILTERS | 17 | 88.024 | 27.032 | 37.026 |

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DIRETOR

DIVISÃO DE SERVIÇOS CARTORAIAS
RL-3010.38-1320-974-NBD-946

**Solid Weight For Deduction
Tank Top**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|---------------------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| BOX | | 3 | 88.024 | 27.032 | 37.476 |
| STAINER | | 25 | 88.024 | 27.032 | 37.476 |
| SIDE GLASS | | 1 | 88.024 | 27.032 | 37.476 |
| BEARINGS | | 6 | 88.024 | 27.032 | 37.476 |
| MECHANICAL SEAL BOXES (2) | | 37 | 88.024 | 27.032 | 37.476 |
| MECHANICAL SEAL BOXES (2) | | 37 | 88.024 | 27.032 | 37.926 |
| VALVES (2) | | 4 | 88.024 | 27.032 | 37.926 |
| VALVE | | 10 | 88.024 | 27.032 | 37.926 |
| FLANGE | | 4 | 88.024 | 27.032 | 37.926 |
| GASKETS | | 3 | 88.024 | 27.032 | 37.926 |
| BOLTS AND NUTS | | 5 | 88.024 | 27.032 | 37.926 |
| MECHANICAL BOX | | 4 | 88.024 | 27.032 | 38.426 |
| CORROSIVE PASTE (4) | | 6 | 88.024 | 27.032 | 38.426 |
| VALVE | | 15 | 88.024 | 27.032 | 38.426 |
| PRESSURE GAUGE | | 2 | 88.024 | 27.032 | 38.426 |
| NUTS AND BOLTS | | 1 | 88.024 | 27.032 | 38.426 |
| GASKETS BOX | | 3 | 88.024 | 27.032 | 38.426 |
| STAINER CASINGS (2) | | 22 | 89.024 | 27.032 | 36.676 |
| STAINER CASING (1) | | 16 | 89.024 | 27.032 | 36.676 |
| STAINER CASINGS (5) | | 80 | 89.024 | 27.032 | 36.676 |
| ACTUATORS (3) | | 25 | 89.024 | 27.032 | 37.026 |
| MECHANICAL BOX | | 6 | 89.024 | 27.032 | 37.476 |
| PUMPS (6) | | 12 | 89.024 | 27.032 | 37.926 |
| FILTER BOXES | | 3 | 89.024 | 27.032 | 37.926 |
| BOLTS | | 2 | 89.024 | 27.032 | 37.926 |
| BOXES | | 4 | 89.024 | 27.032 | 38.426 |
| BOX | | 3 | 90.024 | 27.032 | 37.476 |
| VARIOUS PARTS | | 2 | 90.024 | 27.032 | 37.476 |
| BOXES | | 2 | 90.024 | 27.032 | 37.926 |
| BOXES | | 6 | 90.024 | 27.032 | 37.926 |
| BEARING | | 6 | 90.024 | 27.032 | 37.926 |
| VARIOUS PARTS | | 1 | 90.024 | 27.032 | 37.926 |
| YELLOW COVERS (2) | | 200 | 87.824 | 21.619 | 36.676 |
| YELLOW FRAME | | 45 | 87.824 | 21.619 | 37.476 |
| METAL STRUCTURE | | 100 | 88.824 | 21.619 | 36.676 |
| METAL STRUCTURE | | 25 | 88.824 | 21.619 | 36.676 |
| ELECTRICAL EXTENSION | | 2 | 88.824 | 21.619 | 37.476 |
| YELLOW COVER | | 100 | 87.824 | 22.219 | 36.676 |
| INSTRUMENTS (6) | | 12 | 87.824 | 22.219 | 37.026 |
| MODULES (2) | | 4 | 87.824 | 22.219 | 37.026 |
| INSTRUMENTS (8) | | 16 | 87.824 | 22.219 | 37.476 |
| NEON BOX | | 6 | 87.824 | 22.219 | 37.926 |
| CABLES (7) | | 11 | 88.824 | 22.219 | 37.476 |
| BOX | | 4 | 88.824 | 22.219 | 37.926 |
| ELECTRICAL (9) | | 9 | 89.824 | 22.219 | 37.926 |

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Solid Weight For Deduction
Tank Top

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|---------------------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| ELECTRICAL (4) | | 1 | 89.824 | 22.219 | 37.926 |
| VALVE | | 85 | 87.824 | 23.869 | 36.676 |
| FLY WHEELS (2) | | 4 | 87.824 | 23.869 | 36.676 |
| RODS (7) | | 2 | 87.824 | 23.869 | 36.676 |
| BOXES (8) | | 5 | 87.824 | 23.869 | 37.026 |
| STUD BOXES (2) | | 25 | 87.824 | 23.869 | 37.026 |
| TRACKING BOXES | | 18 | 87.824 | 23.869 | 37.026 |
| BOX | | 12 | 87.824 | 23.869 | 37.476 |
| MECHANICAL SEAL BOXES (2) | | 19 | 87.824 | 23.869 | 37.476 |
| BEARINGS (8) | | 24 | 87.824 | 23.869 | 37.926 |
| BRASS RINGS (2) | | 6 | 87.824 | 23.869 | 37.926 |
| SHAFT SLEEVE | | 2 | 87.824 | 23.869 | 37.926 |
| TUBE SOCKET | | 1 | 87.824 | 23.869 | 37.926 |
| VARIOUS | | 4 | 87.824 | 23.869 | 37.926 |
| PLUNGER (2) | | 4 | 87.824 | 23.869 | 37.926 |
| METAL RING | | 2 | 87.824 | 23.869 | 37.926 |
| SEALS | | 3 | 87.824 | 23.869 | 38.426 |
| PURGING WITH COMPRESSOR | | 25 | 88.824 | 23.869 | 37.926 |
| GREASE GUN BOX | | 6 | 89.824 | 23.869 | 37.926 |
| PURGING | | 25 | 89.824 | 23.869 | 37.926 |
| TOOL BOXES (2) | | 70 | 87.824 | 24.919 | 36.676 |
| RING BOX | | 23 | 87.824 | 24.919 | 37.026 |
| VARIOUS RODS | | 30 | 87.824 | 24.919 | 37.026 |
| HYDRAULIC JACKS | | 15 | 87.824 | 24.919 | 37.026 |
| GREEN TOOLS (4) | | 14 | 87.824 | 24.919 | 37.476 |
| CONTROL BOX | | 18 | 87.824 | 24.919 | 37.476 |
| BLACK TOOLS (5) | | 35 | 87.824 | 24.919 | 37.476 |
| RODS (4) | | 3 | 87.824 | 24.919 | 37.476 |
| FLUID CONTROL GLASS (3) | | 40 | 87.824 | 24.919 | 37.926 |
| SEAL BOX | | 5 | 87.824 | 24.919 | 37.926 |
| RINGS | | 2 | 87.824 | 24.919 | 37.926 |
| SETPADS | | 2 | 87.824 | 24.919 | 37.926 |
| FISHER REPAIR KIT | | 5 | 87.824 | 24.919 | 37.926 |
| SHAFT | | 5 | 88.824 | 24.919 | 36.676 |
| RING GASKET | | 4 | 88.824 | 24.919 | 37.026 |
| WOODEN BOX | | 15 | 88.824 | 24.919 | 37.026 |
| SELENOID VALVES (2) | | 3 | 88.824 | 24.919 | 37.026 |
| STOCK | | 7 | 88.824 | 24.919 | 37.476 |
| GASKET BOX | | 1 | 88.824 | 24.919 | 37.476 |
| GAS FILTER CARTRIGES | | 2 | 88.824 | 24.919 | 37.476 |
| RINGS VARIOUS | | 10 | 88.824 | 24.919 | 37.926 |
| HYDRAULIC JACKS | | 15 | 88.824 | 24.919 | 37.926 |
| HYDRAULIC JACKS | | 7 | 88.824 | 24.919 | 37.926 |
| HYDRAULIC TOOLS | | 2 | 88.824 | 24.919 | 37.926 |
| GASKETS | | 20 | 88.824 | 24.919 | 38.426 |

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JOSE CARLOS FERNANDES GUSMÃO

DIRETOR

10.38-1320-974-NBD-946
UNIDADE DE SERVIÇOS CARTORIAIS



**Solid Weight For Deduction
Tank Top**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| BOX | 4 | 89.824 | 24.919 | 36.676 | |
| RINGS | 3 | 89.824 | 24.919 | 36.676 | |
| BOXES (5) | 10 | 89.824 | 24.919 | 37.026 | |
| BOXES (13) | 10 | 89.824 | 24.919 | 37.476 | |
| BOX | 3 | 89.824 | 24.919 | 37.476 | |
| JACK | 5 | 89.824 | 24.919 | 37.476 | |
| U-BOLTS | 1 | 89.824 | 24.919 | 37.476 | |
| BOXES | 3 | 89.824 | 24.919 | 37.926 | |
| BOXES | 4 | 89.824 | 24.919 | 37.926 | |
| RINGS | 15 | 89.824 | 24.919 | 37.926 | |
| GASKET BOXES (3) | 9 | 89.824 | 24.919 | 38.426 | |
| AFT BLINDS (4) | 50 | 87.824 | 25.519 | 36.676 | |
| VALVES (24) | 36 | 87.824 | 25.519 | 37.026 | |
| VARIOUS GASKETS | 12 | 87.824 | 25.519 | 37.476 | |
| VALVES BOX | 14 | 87.824 | 25.519 | 37.476 | |
| BUSHING | 4 | 87.824 | 25.519 | 37.926 | |
| SILICON BOX | 2 | 87.824 | 25.519 | 37.926 | |
| COMMUNICATION BOXES (3) | 5 | 87.824 | 25.519 | 37.926 | |
| SILICON BOX | 3 | 87.824 | 25.519 | 38.426 | |
| ELECTRICAL BOXES (3) | 8 | 87.824 | 25.519 | 38.426 | |
| RING BOX | 4 | 88.824 | 25.519 | 36.676 | |
| RING ENVELOP (20) | 4 | 88.824 | 25.519 | 37.026 | |
| TUBES (38) | 76 | 88.824 | 25.519 | 37.476 | |
| TUBES (31) | 62 | 88.824 | 25.519 | 37.926 | |
| THERMOMETERS (5) | 3 | 88.824 | 25.519 | 38.426 | |
| SOCKETS BOXES (3) | 6 | 88.824 | 25.519 | 38.426 | |
| THERMOMETERS (2) | 2 | 88.824 | 25.519 | 38.426 | |
| PRESSURE GAUGE | 5 | 89.824 | 25.519 | 37.026 | |
| ELECTRICAL BOX | 1 | 89.824 | 25.519 | 37.026 | |
| ELBOWS | 1 | 89.824 | 25.519 | 37.026 | |
| CABLES TIES | 3 | 89.824 | 25.519 | 37.026 | |
| LETTERS | 1 | 89.824 | 25.519 | 37.026 | |
| LABEL BOX | 2 | 89.824 | 25.519 | 37.026 | |
| PRESSURE GAUGE | 5 | 89.824 | 25.519 | 37.476 | |
| THERMOMTERS (4) | 2 | 89.824 | 25.519 | 37.476 | |
| STUDS | 4 | 89.824 | 25.519 | 37.476 | |
| VARIOUS PARTS | 1 | 89.824 | 25.519 | 37.476 | |
| RING GASKETS | 1 | 89.824 | 25.519 | 37.476 | |
| SLEEVES (2) | 10 | 89.824 | 25.519 | 37.476 | |
| RINGS | 10 | 86.820 | 21.000 | 36.676 | |
| FIXTURE AND SACKLES | 45 | 87.820 | 21.000 | 36.676 | |
| RINGS | 20 | 90.320 | 21.000 | 36.676 | |
| GAS COUPLING | 60 | 86.820 | 26.932 | 36.676 | |
| INSTRUMENTATION LINES | 1 | 90.900 | 26.432 | 36.676 | |
| MISCELLANEOUS ON FLOOR | 300 | 88.392 | 24.000 | 37.076 | |

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JOSÉ CARLOS FIMMENTEL GUSMÃO

PRETOR

38-1320-974-NBD-946
DIVISÃO DE SERVIÇOS CARTORIAS

**Solid Weight For Deduction
Tank Top**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

CORRIDOR & STAIRS:
NO DEDUCTION

T6014

PRODUCTION WAREHOUSE NO.5:
NO DEDUCTION

T6020

PRODUCTION WAREHOUSE NO.6:

T6016

| | | | | |
|------------------------|------|--------|--------|--------|
| ARMCHAIRS (25) | 350 | 82.296 | 31.500 | 37.476 |
| TABLES (10) | 220 | 82.296 | 31.500 | 37.476 |
| CABINETS (3) | 120 | 82.296 | 31.500 | 37.476 |
| MANUALS BOXES (LARGE) | 1250 | 82.296 | 31.500 | 37.476 |
| MANUALS BOXES (MEDIUM) | 451 | 82.296 | 31.500 | 37.476 |
| MANUALS BOXES (SMALL) | 280 | 82.296 | 31.500 | 37.476 |
| MANUAL | 720 | 82.296 | 31.500 | 37.476 |

CORRIDOR:
NO DEDUCTION

T6018

HYDRAULIC WORKSHOP:

T6024

| | | | | |
|-----------------------|----|--------|-------|--------|
| PIPE SUPPORT | 25 | 74.676 | 5.000 | 37.076 |
| WOOD | 10 | 74.676 | 5.000 | 37.076 |
| BOLTS AND NUTS | 20 | 74.676 | 5.000 | 37.076 |
| FIRE HOSE AND SUPPORT | 40 | 74.676 | 5.000 | 37.076 |

HYDRAULIC POWERPACK ROOM:
NO DEDUCTION

T6022

VENTILLATION MCC ROOM:
NO DEDUCTION

T6026

CORRIDOR & STAIRS:
NO DEDUCTION

T6028

INSTRUMENTATION WORKSHOP:
WOOD TABLES (3)

T6030

45 73.914 23.000 37.476

É Cópia fiel do documento original
JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
BR 3010-38-1320-974-NBD-946
DIVISÃO DE SERVIÇOS CARTORIAIS

**Solid Weight For Deduction
Tank Top**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|--|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| MELAMINE TABLE | | 15 | 73.914 | 23.000 | 37.476 |
| CHAIRS (6) | | 48 | 73.914 | 23.000 | 37.476 |
| COMPUTERS (2) | | 50 | 73.914 | 23.000 | 37.476 |
| METAL BOX CONTENT | | 20 | 73.914 | 23.000 | 37.476 |
| FILE CABINETS (2) | | 80 | 73.914 | 23.000 | 37.476 |
| BOXES (5) | | 50 | 73.914 | 23.000 | 37.476 |
| FRIDGE | | 35 | 73.914 | 23.000 | 37.476 |
| STATIONARY | | 25 | 73.914 | 23.000 | 37.476 |
| TOOL BOXES (2) | | 120 | 73.914 | 23.000 | 37.476 |
| BENCHS (3) | | 24 | 73.914 | 23.000 | 37.476 |
|
CORRIDOR:
NO DEDUCTION |
T6032 | | | | |
|
GENERATOR ROOM NO.3:
SPARE CHEST |
T4084 |
250 |
39.000 |
31.000 |
37.500 |
|
GENERATOR ROOM NO.4:
GAS GENERATOR IN CASING |
T4082 |
3270 |
97.536 |
31.000 |
38.576 |
| GAS BOTTLE | | 85 | 97.536 | 31.000 | 38.576 |
|
CHEMICAL INJECTION ROOM:
BUNDLE OF PIPES (SMALL DIA.) |
T4074 |
400 |
62.484 |
11.500 |
36.776 |
|
DELUGE PACKAGE ROOM NO.1:
NAME PLATES |
T4116 |
20 |
64.008 |
24.000 |
36.676 |
|
DELUGE PACKAGE ROOM NO.2:
NO DEDUCTION |
T4118 | | | | |
|
DELUGE PACKAGE ROOM NO.3:
NO DEDUCTION |
T4126 | | | | |
|
DELUGE PACKAGE ROOM NO.4:
NO DEDUCTION |
T4130 | | | | |

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DIVISÃO DE SERVIÇOS CARTORIAIS

**Solid Weight For Deduction
Tank Top**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|--|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| GLYCOL SUMP TANK NO.1:
NO DEDUCTION | T4124 | | | | |
| GLYCOL SUMP TANK NO.2:
NO DEDUCTION | T4128 | | | | |
| CHANGE ROOM:
LOOCKER CONTENT | T1034 | 100 | 37.000 | -1.000 | 37.400 |
| CORRIDOR:
NO DEDUCTION | T1037 | | | | |
| A/C COMPRESSORS & MCC RM:
STEP LADDER (2) | T1039 | 20 | 38.100 | -10.000 | 37.076 |
| BOXES (2) | | 40 | 38.100 | -10.000 | 37.076 |
| OIL BUCKETS (5) | | 70 | 38.100 | -10.000 | 37.076 |
| GAS CILYNDERS (12) | | 900 | 38.100 | -10.000 | 37.076 |
| BATH:
FLOOR POLISHER | T1041 | 30 | 38.100 | -14.000 | 36.956 |
| CRANE OPERATOR CABIN (2):
NO DEDUCTION | T1045 | | | | |
| STOREMAN CABIN (2):
PLASTIC BOTTLE & TUBE | T1047 | 5 | 41.910 | -16.000 | 37.000 |
| WORKOVER SERV. CABIN (2):
NO DEDUCTION | T1049 | | | | |
| LOCKER:
NO DEDUCTION | T1051 | | | | |
| CHANGING ROOM & SAUNA :
NO DEDUCTION | T1055 | | | | |

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**Solid Weight For Deduction
Tank Top**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

TOILETS & SHOWERS :
NO DEDUCTION

T1057

GYM:
NO DEDUCTION

T1059

LAB. TECHNICIAN CABIN (2):
NO DEDUCTION

T1061

WELDER CABIN (2):
NO DEDUCTION

T1063

WORKOVER SERV. CABIN (2):
NO DEDUCTION

T1065

WORKOVER SERV. CABIN (2):
NO DEDUCTION

T1067

WORKOVER SERV. CABIN (2):
NO DEDUCTION

T1069

WORKOVER SERV. CABIN (2):
NO DEDUCTION

T1071

WORKOVER SERV. CABIN (2):
NO DEDUCTION

T1073

ROUGHNECK CABIN (2):
NO DEDUCTION

T1075

ROUGHNECK CABIN (2):
NO DEDUCTION

T1077

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**Solid Weight For Deduction
Tank Top**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

ROUGHNECK CABIN (2):
NO DEDUCTION

T1079

SEAMEN CABIN (2):
NO DEDUCTION

T1081

BROM LOCKER:
NO DEDUCTION

T1083

SPARE CABIN (2):
NO DEDUCTION

T1085

SPARE CABIN (2):
NO DEDUCTION

T1087

SEAMEN CABIN (2):
NO DEDUCTION

T1089

SEAMEN CABIN (2):
NO DEDUCTION

T1091

DRILLER CABIN (2):
NO DEDUCTION

T1093

LINEN LOCKER:
NO DEDUCTION

T1095

FAN ROOM:
NO DEDUCTION

T1097

ASSIST DRILLER CABIN (2):
NO DEDUCTION

T1099

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DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS



**Solid Weight For Deduction
Tank Top**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|---|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| SUB-SEA ENG. CABIN (2):
NO DEDUCTION | T1101 | | | | |
| TOOL PUSHER CABIN (2):
TELEPHONE | T1103 | 3 | 22.860 | -9.000 | 37.576 |
| ROUSTABOUT CABIN (2):
NO DEDUCTION | T1105 | | | | |
| ROUSTABOUT CABIN (2):
NO DEDUCTION | T1107 | | | | |
| ROUSTABOUT CABIN (2):
NO DEDUCTION | T1109 | | | | |
| TOILETS & SHOWERS: | T2036 | | | | |
| BIG CYLINDERS (2) | | 160 | 38.100 | 4.000 | 37.076 |
| SMALL CYLINDERS (2) | | 60 | 38.100 | 4.000 | 37.076 |
| CORRIDOR & STAIRS:
NO DEDUCTION | T2037 | | | | |
| STORAGE AREA : | T2038 | | | | |
| LIEBHERR 22t SPARES, P.O.360 4995, NO.5 | | 1330 | 40.276 | 12.018 | 37.226 |
| LIEBHERR CRANE SPARES 389A0557 | | 493 | 42.170 | 11.768 | 36.916 |
| CHAINES | | 2600 | 43.530 | 11.618 | 36.916 |
| HIGH PRESSURE WASHER, 398A1082, 1/2 | | 115 | 43.120 | 13.318 | 37.126 |
| ANSELL JONES TURNTABLE TRUCK, 398A0741 | | 275 | 42.170 | 13.318 | 36.976 |
| ANSELL JONES TURNTABLE TRUCK, 398A0743 | | 275 | 42.770 | 14.668 | 37.726 |
| ANSELL JONES TURNTABLE TRUCK, 398A0742 | | 275 | 42.770 | 14.668 | 36.976 |
| NIM 2t AIR WINCH, 398A0748 | | 455 | 42.570 | 15.524 | 38.026 |
| NIM 2t AIR WINCH, 398A0749 | | 455 | 42.570 | 15.524 | 37.126 |
| LIEBHERR 22t SPARES, P.O.360 4995, NO.6 | | 3020 | 40.220 | 15.624 | 37.326 |
| ANSELL JONES TURNTABLE TRUCK, 398A0739 | | 275 | 44.170 | 17.824 | 36.976 |
| ANSELL JONES TURNTABLE TRUCK, 398A0740 | | 275 | 44.170 | 17.824 | 37.626 |
| LIEBHERR CRANE SPARES, 398A1078, 2/2 | | 1115 | 42.120 | 17.674 | 37.226 |
| BOX NO.822 SEA TEL EQUIPMENT | | 350 | 44.120 | 19.174 | 37.726 |
| Nuovo Pignone BOOST COMP. COUPLING | | 143 | 42.620 | 19.024 | 36.876 |

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR

DIVISÃO DE SERVIÇOS CARTÓRIOS
RL-3010.38-1320-974-NBD-946



**Solid Weight For Deduction
Tank Top**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|--------------------------------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| CRANE SPARES, P.O. 3604831, 1/2 | | 150 | 41.470 | 19.024 | 36.926 |
| L.P. COMP. OLD ROTOR | | 430 | 41.620 | 18.424 | 36.926 |
| SPARE SOUTHERN AVIONICS, 398A1090 | | 156 | 41.870 | 18.824 | 37.326 |
| LIEBHERR CRANE SPARES, 398A1078, 1/2 | | 1550 | 39.976 | 18.274 | 37.320 |
| STORE LASHING | | 534 | 40.387 | 15.621 | 36.776 |
| CENTRAL/PROD. CONTROL ROOM: | T2040 | | | | |
| SMALL CYLINDERS (15) | | 105 | 30.480 | 7.000 | 37.076 |
| S.C.R: | T2042 | | | | |
| WIRE FOR COMPUTER | | 25 | 32.004 | 13.000 | 37.076 |
| PRINTING PAPER (3) | | 20 | 32.004 | 13.000 | 37.076 |
| INST. TECHN. CABIN (2): | T2044 | | | | |
| NO DEDUCTION | | | | | |
| CATERING CABIN: | T2046 | | | | |
| NO DEDUCTION | | | | | |
| CHIEF STEWARD CABIN (2): | T2048 | | | | |
| NO DEDUCTION | | | | | |
| SEAMEN CABIN (2): | T2050 | | | | |
| NO DEDUCTION | | | | | |
| SPARE CABIN: | T2054 | | | | |
| NO DEDUCTION | | | | | |
| SPARE CABIN: | T2056 | | | | |
| NO DEDUCTION | | | | | |
| SEAMEN CABIN (2): | T2058 | | | | |
| NO DEDUCTION | | | | | |
| CATERING CABIN (2): | T2060 | | | | |

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Solid Weight For Deduction
Tank Top

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

NO DEDUCTION

CATERING CABIN:
NO DEDUCTION

T2062

LINEN LOCKER:
MISCELLANEOUS

T2064

45 26.670 19.500 37.076

FAN ROOM:
NO DEDUCTION

T2066

INST. TECHNICIAN CABIN (2):
NO DEDUCTION

T2068

INST. TECHNICIAN CABIN (2):
NO DEDUCTION

T2070

BRIDGE:
NO DEDUCTION

T2072

STORAGE AREA:

T2080

| | | | | |
|---------------------------------------|-----|--------|--------|---------|
| U BOLTS | 20 | 41.148 | 24.000 | 37.006 |
| PIPE 1" | 25 | 41.148 | 24.000 | 37.006 |
| SAFETY EQUIPMENT BOXES | 75 | 45.320 | 22.974 | 36.926 |
| BOX OF JUNCTION BOXES | 100 | 44.420 | 21.774 | 37.176 |
| ROLLERS-A (2) | 306 | 44.320 | 22.974 | 36.876 |
| SAFETY EQUIPMENT BOXES | 170 | 44.220 | 24.374 | 37.076 |
| ROLLERS-B (2) | 306 | 43.020 | 21.674 | 36.876 |
| HIGH PRESSURE WASHER, 398A1082, 2/2 | 184 | 42.020 | 21.224 | 37.126 |
| JUNCTION BOX ASSEMBLY, BE 102282, 3 | 197 | 41.420 | 21.424 | 36.876 |
| BOX OF ELECTRICAL & LIGHTING EQUIP. | 260 | 43.320 | 22.774 | 37.426 |
| TELECOMMUNICATIONS EQUIP. FROM E.A.E. | 108 | 43.220 | 21.374 | 37.1376 |
| HEAT TRAP, BOX NO.6 | 79 | 41.920 | 23.374 | 37.076 |
| ANSELL JONES SNATCH BLOCKS | 704 | 41.620 | 24.474 | 36.876 |
| ITEM 398A0965 (AFFF) | 120 | 41.920 | 26.032 | 36.976 |
| TELECOMMUNICATIONS EQUIP. FROM E.A.E. | 108 | 40.220 | 21.374 | 37.476 |
| ABB EQUIPMENT | 363 | 39.220 | 21.974 | 37.776 |
| DELUGE SKID PARTS | 335 | 39.970 | 23.674 | 36.976 |



Solid Weight For Deduction
Tank Top

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

| | | | | | |
|---------------------------------------|--|------|--------|--------|--------|
| AFFF, 398A1079, 2/2 | | 1950 | 39.570 | 24.874 | 37.426 |
| Nuovo Pignone SPARE TURBINE COUPLINGS | | 1880 | 36.452 | 21.774 | 37.326 |
| LIEBHERR 22t SPARE LUFFING ROPE | | 2720 | 36.352 | 23.874 | 37.276 |
| STORE LASHING | | 366 | 41.200 | 24.003 | 36.776 |

AIR LOCK:
NO DEDUCTION

T2111

STORAGE AREA:

T2114

| | | | | | |
|---|--|------|--------|--------|--------|
| BOX NO.801 MISCELLANEOUS ITEMS | | 490 | 41.998 | -2.914 | 37.176 |
| BOX NO.845 SPECIAL TOOLS | | 130 | 41.498 | -2.914 | 38.076 |
| BOX NO.833 CAMERA SYSTEM EQUIP. | | 359 | 41.998 | -1.664 | 37.176 |
| SPARES SOUTHERN AVIONICS COMP. (398A1091) | | 156 | 41.498 | -1.664 | 38.076 |
| BOX NO.832 CAMERA SYSTEM EQUIP. | | 1232 | 41.998 | -0.214 | 37.426 |
| BOX NO.815 Nuovo Pignone Turbine PIECES | | 520 | 41.998 | 0.886 | 37.126 |
| SPARES SOUTHERN AVIONICS COMP. (398A1091) | | 35 | 41.550 | 0.586 | 38.076 |
| BOX NO.826 INSULATION | | 800 | 41.998 | 3.396 | 37.276 |
| BOX NO.844 SPECIAL TOOLS | | 260 | 41.550 | 3.396 | 38.076 |
| TELECOM. E.A.E. (398A0639, 13/13) | | 164 | 41.998 | 4.736 | 37.176 |
| BOX NO.851 SPECIAL TOOLS | | 240 | 44.800 | -3.264 | 37.276 |
| BOX OF SPARES | | 75 | 45.320 | -3.450 | 38.076 |
| BOX NO.817 Nuovo Pignone Turbine PIECES | | 520 | 44.800 | -0.564 | 37.076 |
| BOX NO.831 SPECIAL TOOLS | | 360 | 44.800 | -0.564 | 37.876 |
| BOX NO.825 INSULATION | | 800 | 44.720 | 1.486 | 37.376 |
| BOX NO.823 SEA TELEVISION ANTENNA | | 350 | 44.650 | 4.686 | 36.876 |
| TURFERS BOXES (3/5, 0736,0737,0738) | | 306 | 44.950 | 4.686 | 38.076 |
| KENTER LINKS | | 210 | 44.950 | 4.868 | 39.200 |
| BOX NO.855 Nuovo Pignone Pieces | | 20 | 44.950 | 3.950 | 38.076 |
| BOX NO.856 Nuovo Pignone Pieces | | 15 | 44.650 | 3.950 | 38.076 |
| BOX NO.846 LIFTING FRAME | | 300 | 38.076 | 8.668 | 37.076 |
| BOX NO.816 Nuovo Pignone Turbine PIECES | | 520 | 39.176 | 9.968 | 37.026 |
| BOX NO.814 SPARES | | 300 | 37.576 | 8.418 | 37.176 |
| BOX NO.847 MISC. SPARES | | 320 | 38.876 | 8.418 | 36.926 |
| BOX NO.821 SPARES | | 160 | 37.326 | 7.368 | 36.926 |
| BOX NO.830 SPECIAL TOOLS | | 260 | 39.876 | 8.268 | 36.976 |
| BOX NO.827 TANK & DETERGENT | | 430 | 41.076 | 7.318 | 37.420 |
| BOX NO.836 N.P. TROLLEY & WRENCH KIT | | 310 | 39.776 | 6.568 | 37.226 |
| TELECOM. EQUIP. E.A.E. 398A0686, 9/13 | | 42 | 41.076 | 6.410 | 37.900 |
| TELECOM. EQUIP. E.A.E. 398A0686, 10/13 | | 78 | 39.876 | 7.368 | 37.900 |
| TELECOM. EQUIP. E.A.E. 398A0686, 6/13 | | 86 | 39.876 | 8.600 | 37.900 |
| BOX | | 32 | 38.400 | 8.100 | 37.076 |
| BOX | | 32 | 38.400 | 8.600 | 37.076 |


Solid Weight For Deduction
Tank Top

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|--|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| BOX | | 32 | 36.850 | 8.150 | 37.076 |
| BOX NO.837 SPARES | | 1010 | 43.170 | 7.568 | 36.926 |
| BOX NO.852 SPECIAL TOOLS | | 510 | 43.170 | 7.568 | 37.726 |
| TINS OF RESIN/PAINT (398A0954) | | 418 | 42.950 | 9.100 | 36.926 |
| TINS OF RESIN/PAINT (398A0955) | | 418 | 42.950 | 9.100 | 37.700 |
| TINS OF RESIN/PAINT (398A0956) | | 418 | 44.800 | 9.800 | 37.076 |
| TINS OF RESIN/PAINT (398A0956) | | 194 | 43.900 | 9.800 | 37.076 |
| PUMP | | 300 | 42.550 | 10.250 | 37.076 |
| PUMP | | 60 | 43.100 | 10.400 | 37.076 |
| STORE LASHING | | 606 | 38.862 | 3.302 | 36.776 |
| PUMP STORE ROOM NO.1: | T0076 | | | | |
| NO DEDUCTION | | | | | |
| PUMP STORE ROOM NO.2: | T0078 | | | | |
| NO DEDUCTION | | | | | |
| MOONPOOL TANK TOP: | T0113 | | | | |
| LIFTING PUMPS SUCTION PIPES (9) | | 2130 | 56.388 | -7.000 | 36.776 |
| SKID SUPPORT | | 75 | 56.388 | -3.000 | 37.026 |
| GENERAL PERSONNEL EFFECTS | | 875 | 28.000 | 0.000 | 37.400 |
| AFT EXTENSION DECK PORT | T7000 | | | | |
| SLING | | 375 | 105.190 | -20.574 | 37.276 |
| SLING | | 410 | 105.190 | -20.574 | 37.276 |
| AQUAP 1, SAMPLE | | 450 | 106.440 | -22.474 | 36.976 |
| SLING | | 965 | 104.940 | -25.532 | 37.176 |
| SLING | | 1050 | 104.940 | -25.532 | 37.176 |
| BOX 824 SEA TELEVISION ANTENNA | | 460 | 106.340 | -25.632 | 37.676 |
| TIMBERS (10) | | 140 | 99.440 | -21.024 | 36.876 |
| RASCHID RINGS FOR DEAERATOR (2) | | 119 | 105.240 | -12.618 | 37.276 |
| SCR FLEX JOINTS | | 4850 | 106.440 | -12.668 | 37.676 |
| RASCHID RINGS FOR DEAERATOR (2) | | 119 | 105.240 | -17.874 | 37.276 |
| SCR FLEX JOINTS | | 4850 | 106.440 | -18.074 | 37.676 |
| PART OF THE Nuovo Pignone Insulation Crate | | 813 | 98.840 | -11.368 | 36.676 |
| Nuovo Pignone Insulation | | 4210 | 99.490 | -13.018 | 37.826 |
| Nuovo Pignone Insulation | | 4260 | 99.490 | -15.268 | 37.826 |

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Solid Weight For Deduction
Tank Top

| Description | Compart. Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |
|--|-----------------|-------------|-------------------|-------------------|-------------------|
| BOX NO.850 SPECIAL TOOLS | | 1330 | 100.740 | -17.374 | 37.576 |
| Nuovo Pignone Insulation | | 3940 | 96.240 | -17.574 | 37.576 |
| PART OF THE Nuovo Pignone Insulation Crate | | 250 | 94.690 | -18.824 | 37.576 |
| CYLINDERS (3) | | 238 | 101.590 | -18.974 | 36.976 |
| BOX | | 375 | 101.590 | -20.174 | 37.176 |
| ACTUATOR & CONTROL BOX | | 660 | 99.640 | -19.824 | 36.876 |
| ACTUATORS | | 610 | 97.540 | -19.724 | 36.876 |
| ELECTRICAL CABLE | | 450 | 92.140 | -0.300 | 36.926 |
| ELECTRICAL CABLE | | 220 | 92.440 | -1.150 | 36.876 |
| ELECTRICAL CABLE | | 670 | 94.390 | -0.350 | 36.926 |
| ELECTRICAL CABLE | | 293 | 95.440 | -0.450 | 36.876 |
| ELECTRICAL CABLE | | 484 | 96.440 | -0.350 | 36.926 |
| AFT EXTENSION DECK STBD | T8000 | | | | |
| PART OF THE Nuovo Pignone Insulation Crate | | 360 | 92.040 | 3.700 | 37.076 |
| PART OF THE Nuovo Pignone Insulation Crate | | 140 | 92.240 | 8.368 | 37.476 |
| PART OF THE Nuovo Pignone Insulation Crate | | 300 | 93.240 | 1.200 | 36.926 |
| PART OF THE Nuovo Pignone Insulation Crate | | 225 | 93.240 | 3.700 | 37.126 |
| PART OF THE Nuovo Pignone Insulation Crate | | 300 | 93.440 | 7.668 | 36.976 |
| TOOL, SPIDER DECK | | 210 | 93.740 | 8.618 | 36.876 |
| ELECTRICAL CABLE | | 220 | 94.340 | 8.618 | 36.876 |
| ELECTRICAL CABLE | | 2090 | 96.840 | 7.268 | 37.226 |
| BOX NO.803 Nuovo Pignone TURBINES PIECES | | 290 | 95.340 | 8.668 | 36.976 |
| BOX | | 386 | 96.540 | 8.668 | 36.876 |
| FLAME ARRESTORS | | 636 | 97.940 | 8.668 | 36.876 |
| ANSELL JONES SNATCH BLOCKS | | 330 | 98.940 | 8.668 | 36.776 |
| BOX | | 813 | 98.840 | 10.268 | 36.726 |
| PART OF THE Nuovo Pignone Insulation Crate | | 410 | 100.240 | 2.000 | 36.776 |
| SEA CHEST HATCHES | | 410 | 100.240 | 3.600 | 36.701 |
| SEA CHEST HATCHES | | 1060 | 100.440 | 6.568 | 37.026 |
| BOX NO.804 Nuovo Pignone TURBINE PIECES | | 650 | 101.440 | 6.568 | 36.976 |
| BOX NO.828 SPECIAL TOOL, LIFTING EQUIP. | | 300 | 100.740 | 6.568 | 37.526 |
| BOX NO.808 PIPE CRATE | | 330 | 100.040 | 9.168 | 36.976 |
| SPIDER DECK WIRE ROLLER | | | | | |
| ELECTRICAL CABLE | | 345 | 92.190 | 10.668 | 36.951 |
| ELECTRICAL CABLE | | 345 | 92.190 | 11.918 | 36.951 |
| SPARE MOTOR FOR WINDLASS | | 3990 | 94.240 | 10.668 | 37.276 |
| SPARE MOTOR FOR WINDLASS | | 3990 | 94.240 | 11.568 | 37.276 |
| ELECTRIC CABLE | | 285 | 91.990 | 14.468 | 36.976 |
| ELECTRIC CABLE | | 240 | 91.840 | 15.068 | 36.776 |
| ELECTRIC CABLE | | 285 | 92.040 | 15.968 | 37.176 |
| ELECTRIC CABLE | | 550 | 92.040 | 17.574 | 37.276 |
| LIFEBUOYS | | 30 | 93.880 | 17.674 | 36.926 |
| SEA CHEST HATCHES | | 410 | 95.390 | 17.924 | 36.726 |



Solid Weight For Deduction
Tank Top

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-----------------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
| ELECTRICAL CABLE | | 295 | 96.740 | 17.574 | 36.976 |
| SEA CHEST HATCHES | | 410 | 98.340 | 17.924 | 36.751 |
| STORE LASHING | | 2124 | 97.440 | -14.700 | 36.776 |
| Total Tank Top | | 116711 | 74.355 | 3.002 | 37.338 |

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JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS


Solid Weight For Deduction
Second Deck

| Description | Compарт. Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |
|--------------------------------------|-----------------|-------------|-------------------|-------------------|-------------------|
| AUX. MACHINERY SPACE: | S5001 | | | | |
| NO DEDUCTION | | | | | |
| WAREHOUSE: | S5003 | | | | |
| MISCELLANEOUS ON SELVES | | 4900 | 85.344 | -15.500 | 40.524 |
| MATERIEL ON FLOOR | | 2000 | 85.344 | -15.500 | 40.524 |
| WELDING SHOP: | S5005 | | | | |
| ELECTRODES BOXES (47) | | 611 | 90.440 | -24.932 | 40.600 |
| ACETYLEN & OXYGEN BOTTLES (7) | | 500 | 90.440 | -24.932 | 40.600 |
| BOX (1) | | 75 | 90.440 | -24.932 | 40.600 |
| CORRIDOR: | S5011 | | | | |
| NO DEDUCTION | | | | | |
| ELECTRONIC WORKSHOP: | S5013 | | | | |
| TABLES (2) | | 30 | 70.104 | -15.000 | 40.124 |
| CHAIRS (3) | | 24 | 70.104 | -15.000 | 40.124 |
| BABY FOOT | | 50 | 70.104 | -15.000 | 40.124 |
| CORRIDOR: | S5014 | | | | |
| BASKETS (2) | | 120 | 79.000 | -15.000 | 40.000 |
| TROLEY | | 60 | 79.000 | -15.000 | 40.000 |
| CORRIDOR: | S5017 | | | | |
| NO DEDUCTION | | | | | |
| OFFICE (MAINT'CE SUPERVISOR): | S5019 | | | | |
| CHAIRS (2) | | 16 | 76.200 | -24.000 | 40.000 |
| TABLE | | 15 | 76.200 | -24.000 | 40.000 |
| COFFEE SHOP: | S5021 | | | | |
| NO DEDUCTION | | | | | |
| LAUNDRY: | S5023 | | | | |
| FILES BOXES (2) | | 20 | 68.580 | -24.000 | 40.624 |

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JOSE CARLOS PIMENTEL GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTÓGRAFOS



**Solid Weight For Deduction
Second Deck**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|---|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| HOSE (1) | | 10 | 68.580 | -24.000 | 40.624 |
| AIR HANDLING RM :
NO DEDUCTION | S6002 | | | | |
| PRODUCTION WAREHOUSE 1:
TOOL BOX | S6004 | 15 | 85.344 | 20.000 | 40.124 |
| PRODUCTION WAREHOUSE 2:
NO DEDUCTION | S6006 | | | | |
| I.A.S. UPS RM 1:
BOXES | S6007 | 2000 | 76.200 | -3.000 | 40.124 |
| WAREHOUSE OFFICE: | S6008 | | | | |
| CABINET (1) | | 300 | 87.630 | 25.000 | 39.624 |
| CABINET (3) | | 375 | 87.630 | 25.000 | 39.624 |
| CABINET (1) | | 40 | 87.630 | 25.000 | 39.624 |
| BOXES (11) | | 275 | 87.630 | 25.000 | 39.624 |
| CABINET (5) | | 250 | 87.630 | 25.000 | 39.624 |
| TABLE (2) | | 30 | 87.630 | 25.000 | 39.624 |
| CHAIRS (6) | | 48 | 87.630 | 25.000 | 39.624 |
| BOXES (3) | | 60 | 87.630 | 25.000 | 39.624 |
| TOP BINDERS (3) | | 150 | 87.630 | 25.000 | 39.624 |
| BOX (1) | | 20 | 87.630 | 25.000 | 39.624 |
| BATTERY ROOM NO.1: | S6009 | | | | |
| TABLE | | 15 | 76.200 | -8.000 | 40.124 |
| CHAIRS (3) | | 24 | 76.200 | -8.000 | 40.124 |
| DOCUMENTATION/PERSONNAL | | 60 | 76.200 | -8.000 | 40.124 |
| PRODUCTION WAREHOUSE 3:
NO DEDUCTION | S6010 | | | | |
| CORRIDOR:
NO DEDUCTION | S6012 | | | | |

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JOSE CARLOS FIMINTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS


Solid Weight For Deduction
Second Deck

| Description | Compartment Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |
|-------------------------------|--------------------|-------------|-------------------|-------------------|-------------------|
| I.A.S. UPS RM 2: | S6014 | | | | |
| CHAIRS (2) | | 15 | 80.772 | 18.000 | 40.124 |
| FILE CABINETS (2) | | 150 | 80.772 | 18.000 | 40.124 |
| TABLE AND RACK | | 50 | 80.772 | 18.000 | 40.124 |
| TOOL BOX | | 20 | 80.772 | 18.000 | 40.124 |
| STAIRS: | S6015 | | | | |
| NO DEDUCTION | | | | | |
| BATTERY ROOM NO.2: | S6016 | | | | |
| VENT DUCT | | 5 | 79.248 | 13.000 | 40.624 |
| COMPRESSOR CONTROL RM: | S6018 | | | | |
| NO DEDUCTION | | | | | |
| CO 2 ROOM : | S6020 | | | | |
| NO DEDUCTION | | | | | |
| COMPRESSOR MCC RM : | S6022 | | | | |
| NO DEDUCTION | | | | | |
| CORRIDOR: | S6024 | | | | |
| NO DEDUCTION | | | | | |
| STAIRS: | S6026 | | | | |
| NO DEDUCTION | | | | | |
| CORRIDOR: | S6028 | | | | |
| NO DEDUCTION | | | | | |
| ELECT 'L EQUIPT RM: | S6030 | | | | |
| CHAIRS (4) | | 32 | 73.152 | 25.000 | 40.124 |
| MCC ROOM NO. 2: | S3025 | | | | |

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DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS



**Solid Weight For Deduction
Second Deck**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

NO DEDUCTION

MCC ROOM NO. 1 : S3027
NO DEDUCTION

MEETING ROOM: S3029
NO DEDUCTION

LAUNDRY / CHANGE ROOM: S3031
LOOCKER CONTENT 1200 53.000 -17.000 40.500

CORRIDOR: S3033
NO DEDUCTION

PLATFORM MANAGER OFFICE: S3035
ELECTRICAL BOX WITH CABLE 20 53.340 -24.000 39.724
BRASOIL BAGAGE 600 53.340 -24.000 39.724

STAIRS: S3037
NO DEDUCTION

TECHNICAL LIBRARY: S3039
NO DEDUCTION

CHEMICAL INJECTION ROOM (MEZZ): S4032
NO DEDUCTION

DELUGE PACKAGE RM (MEZZ): S4034
NO DEDUCTION

DRYING ROOM: S1030
TABLE 25 54.864 -20.000 40.124

MESS ROOM (CAFETERIA): S1041

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



Solid Weight For Deduction
Second Deck

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

NO DEDUCTION

DAY ROOM: S1043
NO DEDUCTION

TOILET / SHOWER: S1045
NO DEDUCTION

TOILET: S1047
NO DEDUCTION

OFFICE (PLATFORM ENGINEER): S1049
FILE CABINET 20 44.196 -24.000 40.124

OFFICE (PRODUCTION): S1051
NO DEDUCTION

CORRIDOR: S1052
NO DEDUCTION

OFFICE (OPERATION): S1053
TABLE (1) 5 36.576 -24.000 40.624
OFFICE SUPPLY 70 36.576 -24.000 40.624
BRASOIL BAGAGE 850 36.576 -24.000 40.624

LOCKER: S1055
CLEANING MATERIAL 135 32.004 -2.500 40.624

CCR OPERATOR CABIN: S1061
NO DEDUCTION

CCR OPERATOR CABIN: S1063
NO DEDUCTION

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JOSE CARLOS PIMENTEL GUSMÃO
(DIRETOR
DIVISÃO DE SERVIÇOS CARTORÁRIOS



**Solid Weight For Deduction
Second Deck**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|---|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
| CCR OPERATOR CABIN:
NO DEDUCTION | S1065 | | | | |
| MCR OPERATOR CABIN:
NO DEDUCTION | S1067 | | | | |
| DAYROOM:
NO DEDUCTION | S1069 | | | | |
| OFFICE (WORKMEN):
NO DEDUCTION | S1071 | | | | |
| OFFICE (INDUSTRIAL SAFETY):
NO DEDUCTION | S1073 | | | | |
| LOCKER:
SAFETY PERSONNEL EQUIPMENT | S1075 | 75 | 30.480 | -27.000 | 40.124 |
| STAIRS:
NO DEDUCTION | S1077 | | | | |
| RADIO OPERATOR CABIN (2):
NO DEDUCTION | S1079 | | | | |
| MCR OPERATOR CABIN (2):
NO DEDUCTION | S1081 | | | | |
| LINEN LOCKER:
NO DEDUCTION | S1083 | | | | |
| FAN ROOM:
NO DEDUCTION | S1085 | | | | |
| MAINT. SUPERINT. CABIN (1): | S1087 | | | | |

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**Solid Weight For Deduction
Second Deck**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|--|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| BED SIDE TABLES (2) | | 24 | 25.908 | -15.000 | 40.124 |
| STABIL. OFFICER CABIN (2):
NO DEDUCTION | S1089 | | | | |
| MEDIC CABIN (1):
NO DEDUCTION | S1091 | | | | |
| HOSPITAL:
MEDICAL MATERIAL | S1093 | 25 | 24.384 | -5.000 | 40.624 |
| AIR LOCK:
NO DEDUCTION | S1095 | | | | |
| CORRIDOR:
WATER FONTAIN | S1111 | 50 | 38.100 | -21.000 | 40.324 |
| CORRIDOR:
NO DEDUCTION | S2033 | | | | |
| GALLEY:
VARIOUS & FOOD | S2036 | 180 | 40.390 | 3.000 | 40.650 |
| STORE (GALLEY):
VARIOUS & FOOD | S2038 | 116 | 40.390 | 8.500 | 40.650 |
| TOILET:
NO DEDUCTION | S2040 | | | | |
| FREEZING ROOM:
FOOD | S2042 | 450 | 42.670 | 17.000 | 40.650 |
| DRY STORE NO.2:
VARIOUS 7 FOOD | S2044 | 660 | 37.340 | 15.000 | 40.650 |

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Solid Weight For Deduction
Second Deck

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

STAIRS:
NO DEDUCTION

S2046

AIR LOCK:
NO DEDUCTION

S2048

FAN ROOM:
PLASTIC HOSE

S2050

1 32.766 2.000 40.124

STAIRS:
NO DEDUCTION

S2052

CG LOCKER:
NO DEDUCTION

S2054

ELECTRICAL SUPERV. CABIN (2):
NO DEDUCTION

S2056

OPEN STORAGE (T.B.D):
NO DEDUCTION

S2057

ELECTRICAL TECHN. CABIN (2):
NO DEDUCTION

S2058

ELECTRICAL TECHN. CABIN (2):
NO DEDUCTION

S2060

ELECTRICAL TECHN. CABIN (2):
NO DEDUCTION

S2062

PROD. OPERATOR CABIN (2):
NO DEDUCTION

S2064

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JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

**Solid Weight For Deduction
Second Deck**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|--|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
| PROD. OPERATOR CABIN (2):
NO DEDUCTION | S2066 | | | | |
| PROD. OPERATOR CABIN (2):
NO DEDUCTION | S2068 | | | | |
| PROD. OPERATOR CABIN (2):
NO DEDUCTION | S2070 | | | | |
| LOCKER:
PERSONNAL SAFETY EQUIP. | S2072 | 275 | 30.500 | 27.000 | 40.124 |
| STAIRS:
NO DEDUCTION | S2074 | | | | |
| CATERING OFFICE:
NO DEDUCTION | S2076 | | | | |
| PROD. SUPERVISOR CABIN (1):
NO DEDUCTION | S2078 | | | | |
| LINEN LOCKER:
MISCELLANEOUS | S2080 | 225 | 25.146 | 19.500 | 40.124 |
| FAN ROOM:
NO DEDUCTION | S2082 | | | | |
| MARINE SUPERINT.CABIN (1):
NO DEDUCTION | S2084 | | | | |
| OFFSHORE INST. MAN.CABIN (1):
PLASTIC SHEET | S2086 | 1 | 24.384 | 13.000 | 40.624 |

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JOSE CARLOS MONTENEGRO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGIOS

**Solid Weight For Deduction
Second Deck**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|--|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| MEN CABIN (2):
NO DEDUCTION | S2088 | | | | |
| MECH.TECHN.CABIN (2):
NO DEDUCTION | S2090 | | | | |
| MECH.TECHN.CABIN (2):
CHAIR (1) | S2092 | 8 | 21.336 | 4.000 | 40.100 |
| CCR OPERATOR CABIN (2):
NO DEDUCTION | S2094 | | | | |
| FIRE PUMP ROOM NO. 3:
FIREFIGHT SUITS (4) | S2096 | 181 | 16.002 | 6.000 | 39.824 |
| ANTI-FIRE BOTTLES (2) | | 15 | 16.002 | 6.000 | 39.824 |
| CHILLING ROOM:
FOOD | S2100 | 937 | 42.670 | 13.000 | 40.650 |
| CORRIDOR:
NO DEDUCTION | S2112 | | | | |
| CENTRAL CAISSON AREA:
NO DEDUCTION | S0099 | | | | |
| GENERAL PERSONNEL EFFECTS | | 875 | 28.000 | 0.000 | 40.500 |
| EXTERIOR ZONES: | | | | | |
| VENTS (2) | | 120 | 79.248 | 30.000 | 39.874 |
| GARBAGE CONTAINER (2) | | 862 | 12.500 | 5.000 | 40.200 |
| CYLINDER GAS RACK | | 341 | 20.574 | 33.000 | 40.424 |
| BEAM FOR ELEVATOR | | 180 | 20.986 | 22.500 | 41.124 |
| BEAM FOR ELEVATOR | | 131 | 19.986 | 22.500 | 42.222 |
| BEAM FOR ELEVATOR | | 20 | 20.650 | 22.500 | 42.322 |
| BEAM FOR ELEVATOR | | 180 | 20.136 | 26.500 | 39.624 |

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JOSE CARLOS PAZINTEL GUSMÃO
DIRETOR

DIVISÃO DE SERVIÇOS CARTORIAIS

Solid Weight For Deduction
Second Deck

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

| | | | | | |
|-------------------|--|-------|--------|--------|--------|
| Total Second Deck | | 21223 | 64.017 | -4.656 | 40.376 |
|-------------------|--|-------|--------|--------|--------|

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JOSE CARLOS PINHEIRO GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFICOS

**Solid Weight For Deduction
Main Deck**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

| | | | | | |
|-------------------------------------|-------|-----|--------|---------|--------|
| REC/BRIEF ARRIVAL DEPARTURE: | M1009 | | | | |
| TABLES (5) | | 50 | 31.550 | -23.900 | 43.122 |
| VARIOUS INCLINING EQUIP. | | 120 | 31.550 | -23.900 | 43.122 |
| OPTICAL EQUIP. | | 25 | 31.550 | -23.900 | 43.122 |
| DRAWING BOXES (2) | | 20 | 31.550 | -23.900 | 43.122 |
| PERSONNEL EFFECT | | 40 | 31.550 | -23.900 | 43.122 |

TOILET: M1011
NO DEDUCTION

| | | | | | |
|--------------------|-------|-----|--------|---------|--------|
| PASSAGEWAY: | M1013 | | | | |
| BOX P.O.16723 | | 145 | 28.000 | -22.300 | 42.972 |

| | | | | | |
|---------------------|-------|----|--------|---------|--------|
| VESTIBULE: | M1015 | | | | |
| BOX NO.398A0671 | | 6 | 26.100 | -23.800 | 42.972 |
| BOX NO.398A0715 | | 20 | 26.100 | -23.800 | 42.972 |
| BOX NO.W.O.5837 | | 25 | 26.100 | -23.800 | 42.972 |
| BOX NO.398A0714 | | 12 | 26.100 | -23.800 | 42.972 |
| BOX P.O.13028 | | 8 | 26.100 | -23.800 | 42.972 |
| BOX W.O.5837 | | 25 | 26.100 | -23.800 | 42.972 |
| BOX 398A0716 | | 18 | 26.100 | -23.800 | 42.972 |
| BLEU WIRE | | 8 | 26.100 | -23.800 | 42.972 |
| BOX NO.398A0712 (4) | | 14 | 26.100 | -23.800 | 42.972 |
| VARIOUS | | 4 | 26.100 | -23.800 | 42.972 |

| | | | | | |
|----------------------|-------|----|--------|---------|--------|
| RADIO ROOM: | M1017 | | | | |
| BOX | | 15 | 22.960 | -24.000 | 43.572 |
| BOX P.O.56518 | | 12 | 22.960 | -24.000 | 43.572 |
| BOOKS | | 48 | 22.960 | -24.000 | 43.572 |
| YELLOW CYLINDERS (2) | | 12 | 22.960 | -24.000 | 43.572 |
| COMPUTER SCREEN | | 16 | 22.960 | -24.000 | 43.572 |
| TELEVISION | | 8 | 22.960 | -24.000 | 43.572 |
| VARIOUS | | 15 | 22.960 | -24.000 | 43.572 |
| CABINET VARIOUS | | 45 | 22.960 | -24.000 | 43.572 |

| | | | | | |
|--------------------------------|-------|----|--------|---------|--------|
| TELECOM EQUIPMENT ROOM: | M1019 | | | | |
| CABINET | | 35 | 26.300 | -21.800 | 43.572 |
| EQUIPMENT RADIO (4) | | 20 | 26.300 | -21.800 | 43.572 |
| VIDEO (6) | | 9 | 26.300 | -21.800 | 43.572 |
| DRAWN | | 6 | 26.300 | -21.800 | 43.572 |

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Solid Weight For Deduction
Main Deck

| Description | Compart. Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |
|------------------------------|-----------------|-------------|-------------------|-------------------|-------------------|
| FIRE PUMP RM NO. 2: | M1023 | | | | |
| NO DEDUCTION | | | | | |
| TELECOMS/UPS RM NO.1: | M1031 | | | | |
| NO DEDUCTION | | | | | |
| BATTERY RM NO.3: | M1035 | | | | |
| NO DEDUCTION | | | | | |
| UPS RM NO. B: | M1037 | | | | |
| ELECTRIC CABLE | | 220 | 38.200 | -24.500 | 42.872 |
| PROJECTORS (2) | | 110 | 38.200 | -24.500 | 42.872 |
| VARIOUS | | 25 | 38.200 | -24.500 | 42.872 |
| INCINERATOR: | M2008 | | | | |
| EMPTY BAREL (1) | | 20 | 22.500 | 25.000 | 43.372 |
| MARINE STORE: | M3003 | | | | |
| OIL BARILS (47x205 l.) | | 9400 | 52.578 | -13.500 | 43.172 |
| SALT BAGS (8) | | 320 | 52.578 | -13.500 | 43.172 |
| FILTER PACKS (2) | | 10 | 52.578 | -13.500 | 43.172 |
| BARILS (29) | | 580 | 52.578 | -13.500 | 43.172 |
| HOSES (2) | | 8 | 52.578 | -13.500 | 43.172 |
| TIMBERS | | 65 | 52.578 | -13.500 | 43.172 |
| OIL BARIL | | 55 | 52.578 | -13.500 | 43.172 |
| BLACK HOSE | | 35 | 52.578 | -13.500 | 43.172 |
| EMERGENCY GEN'R ROOM: | M3005 | | | | |
| OIL BARILS (2) | | 20 | 50.292 | -24.000 | 44.172 |
| OIL BARIL (1) | | 15 | 50.292 | -24.000 | 44.172 |
| PIPING | | 35 | 50.292 | -24.000 | 44.172 |
| BOX | | 8 | 50.292 | -24.000 | 49.272 |

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JOSE CARLOS M. DIRETOR
50.292
DIREÇÃO DE SERVIÇOS


Solid Weight For Deduction
Main Deck

| Description | Compart. Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |
|--|-----------------|-------------|-------------------|-------------------|-------------------|
| ELECTRICAL CABLE | | 12 | 50.292 | -24.000 | 49.272 |
| PIPNG | | 40 | 50.292 | -24.000 | 49.272 |
| PAINT LOCKER : | M0002 | | | | |
| PAINT BUCKETS (11.73 l.) | | 460 | 64.770 | 9.000 | 44.177 |
| PAINT BUCKETS (12.78 l.) | | 338 | 64.770 | 9.000 | 44.177 |
| PAINT BUCKETS (15.15 l.) | | 300 | 64.770 | 9.000 | 44.177 |
| PAINT BUCKETS (18.93 l.) | | 308 | 64.770 | 9.000 | 44.177 |
| PAINT BUCKETS (16.31 l.) | | 108 | 64.770 | 9.000 | 44.177 |
| PAINT BUCKETS (16) | | 480 | 64.770 | 9.000 | 44.177 |
| PAINT BUCKETS (42) | | 189 | 64.770 | 9.000 | 44.177 |
| PAINT BUCKETS (97) | | 1455 | 64.770 | 9.000 | 44.177 |
| PAINT BUCKETS (16) | | 43 | 64.770 | 9.000 | 44.177 |
| PAINT BUCKETS (6) | | 18 | 64.770 | 9.000 | 44.177 |
| PAINT BUCKETS (1) | | 7 | 64.770 | 9.000 | 44.177 |
| DECK LOCKER: | M0006 | | | | |
| ROPE COILS (3) | | 420 | 47.244 | 8.500 | 43.072 |
| ROPE COIL | | 140 | 47.244 | 8.500 | 43.072 |
| VARIOUS | | 100 | 47.244 | 8.500 | 43.072 |
| COFFEE SHOP: | M0007 | | | | |
| NO DEDUCTION | | | | | |
| CENTRAL CAISSON AREA (DRILL FL.): | M0010 | | | | |
| TIMBER | | 96 | 56.388 | 0.000 | 43.800 |
| BRASOIL PLYWOOD BOX | | 100 | 56.388 | 0.000 | 43.800 |
| BUNDLE OF PIPES | | 75 | 56.388 | 0.000 | 43.800 |
| BOLTS & NUTS | | 200 | 57.000 | -4.000 | 43.000 |
| INTRUMENTATION PIPE | | 50 | 62.000 | 6.000 | 43.000 |
| EXTERIOR AREA: | | | | | |
| INCLINING MATERIAL: | | | | | |
| Inclining Weight no.A | | 8795 | 102.393 | -11.539 | 44.215 |
| Inclining Weight no.B | | 8666 | 102.393 | -9.839 | 44.232 |
| Inclining Weight no.C | | 8187 | 96.604 | 0.921 | 44.427 |
| Inclining Weight no.D | | 8267 | 94.904 | 0.921 | 44.427 |
| Inclining Weight no.E | | 8128 | 93.204 | 0.921 | 44.427 |
| Inclining Weight no.F | | 7974 | 96.604 | 4.445 | 44.427 |

É CÓPIA DE DOCUMENTO ORIGINAL
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTÓGRAFOS

Solid Weight For Deduction
Main Deck

| Description | Compartment Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |
|---|--------------------|-------------|-------------------|-------------------|-------------------|
| Inclining Weight no.G | | 8160 | 94.904 | 4.445 | 44.427 |
| Inclining Weight no.W | | 8673 | 93.204 | 4.445 | 44.427 |
| Inclining Weight no.H | | 7888 | 98.304 | 0.921 | 44.427 |
| Inclining Weight no.T | | 8845 | 97.406 | 13.315 | 44.357 |
| Inclining Weight no.U | | 8838 | 97.406 | 15.015 | 44.357 |
| Inclining Weight no.V | | 8986 | 97.406 | 16.715 | 44.357 |
| Inclining Weight no.L | | 8051 | 22.206 | -11.539 | 44.215 |
| Inclining Weight no.M | | 7834 | 22.206 | -9.839 | 44.232 |
| Inclining Weight no.N | | 8829 | 29.434 | -0.779 | 44.427 |
| Inclining Weight no.O | | 8936 | 27.734 | -0.779 | 44.427 |
| Inclining Weight no.P | | 8716 | 26.034 | -0.779 | 44.427 |
| Inclining Weight no.Q | | 8809 | 29.434 | 2.745 | 44.427 |
| Inclining Weight no.R | | 8850 | 27.734 | 2.745 | 44.427 |
| Inclining Weight no.S | | 8836 | 26.034 | 2.745 | 44.427 |
| Inclining Weight no.K | | 7902 | 31.134 | -0.779 | 44.427 |
| Inclining Weight no.I | | 8147 | 37.220 | 13.315 | 44.357 |
| Inclining Weight no.J | | 8292 | 37.220 | 15.015 | 44.357 |
| Inclining Weight no.X | | 8217 | 37.220 | 16.715 | 44.357 |
| Deck Protection Timber A, Area no.1 | | 771 | 101.423 | -11.623 | 43.001 |
| Deck Protection Timber B, Area no.1 | | 907 | 101.196 | -9.945 | 43.019 |
| Deck Protection Timber J, Area no.2 | | 2495 | 95.919 | -0.779 | 43.118 |
| Deck Protection Timber H, Area no.2 | | 2722 | 95.896 | 0.921 | 43.116 |
| Deck Protection Timber TRANSIT, Area no.2 | | 2495 | 96.474 | 2.745 | 43.100 |
| Deck Protection Timber, Area no.2 | | 2541 | 96.171 | 4.445 | 43.078 |
| Deck Protection Timber C, Area no.3 | | 2722 | 95.588 | 16.775 | 42.942 |
| Deck Protection Timber D, Area no.3 | | 2722 | 97.406 | 16.732 | 42.943 |
| Deck Protection Timber K, Area no.4 | | 2495 | 25.136 | 11.539 | 43.150 |
| Deck Protection Timber L, Area no.4 | | 2405 | 25.336 | 9.839 | 43.167 |
| Deck Protection Timber M, Area no.5 | | 2541 | 28.796 | 2.745 | 43.362 |
| Deck Protection Timber N, Area no.5 | | 2450 | 28.910 | 4.445 | 43.362 |
| Deck Protection Timber O, Area no.5 | | 2632 | 28.911 | -0.785 | 43.362 |
| Deck Protection Timber P, Area no.5 | | 2450 | 29.196 | 0.879 | 43.362 |
| Deck Protection Timber E, Area no.6 | | 2269 | 37.220 | 12.983 | 43.292 |
| Deck Protection Timber F, Area no.6 | | 2405 | 38.920 | 13.238 | 43.292 |
| Deck Protection Timber Q, Transit Area | | 2949 | 38.891 | -9.456 | 43.223 |
| Timber Blocs, Area no.1 | | 205 | 101.543 | -10.689 | 43.230 |
| Timber Blocs, Area no.2 | | 1878 | 95.104 | 1.845 | 43.392 |
| Timber Blocs, Area no.3 | | 988 | 96.498 | 15.015 | 43.243 |
| Personnels (62) | | 5270 | 44.007 | 15.015 | 37.846 |
| Workpack No.1440051-119, rev.0: | | | | | |
| TP FW 8029 Fire Water Line (Steel Mat.) | | 1501 | 47.057 | 0.768 | 49.999 |

É CÓPIA DE DO DOCUMENTO ORIGINAL

DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

**Solid Weight For Deduction
Main Deck**

| Description | Compарт.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

EXTERIOR AREA: (ZONE M1)

| | | | | | |
|-------------------------|--|------|--------|---------|--------|
| jet fuel tank | | 2290 | 37.000 | -22.000 | 46.500 |
| helideck net | | 400 | 35.000 | -22.000 | 46.000 |
| hoses flexibles | | 90 | 34.000 | -24.000 | 45.700 |
| stairs | | 175 | 25.000 | -14.000 | 43.000 |
| scr roller | | 250 | 38.000 | -18.000 | 43.200 |
| tool box | | 181 | 44.500 | -18.000 | 43.000 |
| tool box | | 141 | 44.500 | -18.500 | 43.000 |
| wire 100m | | 2450 | 26.300 | -8.400 | 43.000 |
| wire 40m | | 980 | 26.800 | -6.900 | 42.900 |
| wire 15m | | 200 | 27.800 | -9.000 | 42.800 |
| turbine with cocoun | | 4364 | 26.500 | -3.000 | 43.800 |
| turbine with cocoun | | 9500 | 32.550 | -4.000 | 44.000 |
| rope | | 159 | 23.750 | -5.300 | 43.300 |
| wire | | 200 | 23.750 | -5.300 | 42.700 |
| hook | | 200 | 23.600 | -2.400 | 42.700 |
| hatch cover drill floor | | 2245 | 37.400 | -3.500 | 43.000 |
| steel bundel | | 386 | 32.400 | -3.500 | 43.000 |
| scrap container | | 771 | 45.000 | -12.000 | 43.400 |
| basket electricalwire | | 227 | 40.000 | -9.000 | 43.200 |
| basket | | 50 | 36.000 | -8.000 | 43.000 |
| box davie personal | | 749 | 38.000 | -9.000 | 43.700 |
| box unidentified | | 204 | 39.500 | -2.200 | 43.300 |
| ladder with gard | | 195 | 36.400 | -3.500 | 44.000 |
| Spreader beam | | 159 | 34.000 | 0.000 | 43.500 |
| bundel of wood | | 576 | 41.000 | -14.000 | 43.500 |
| wood blocs | | 312 | 41.000 | -6.000 | 43.500 |
| dockage wood box | | 2291 | 38.000 | -18.000 | 43.400 |
| open container Helideck | | 613 | 30.000 | -39.000 | 48.400 |

EXTERIOR AREA: (ZONE M2)

| | | | | | |
|---------------------|--|-------|--------|--------|--------|
| turbine with cocoun | | 4364 | 23.400 | -8.400 | 43.800 |
| trailer | | 13500 | 31.500 | 7.900 | 44.400 |
| scrap container | | 499 | 34.000 | 11.000 | 43.800 |
| platform | | 435 | 39.500 | 8.000 | 43.000 |
| grating | | 1714 | 31.500 | 4.500 | 43.400 |
| ladder gard | | 144 | 37.800 | 4.500 | 43.900 |
| railings | | 130 | 22.600 | 19.000 | 43.800 |
| wire reel 2 | | 272 | 40.000 | 1.500 | 43.000 |
| valves | | 130 | 43.000 | 2.000 | 42.900 |
| spare box | | 800 | 43.000 | 4.500 | 43.100 |
| box diffuser | | 800 | 43.000 | 3.000 | 43.100 |
| pannel drillfloor | | 1800 | 31.630 | 8.000 | 45.900 |
| plywood bundel | | 338 | 30.900 | 5.700 | 43.500 |
| box letartre | | 340 | 35.000 | 2.800 | 43.200 |

COPIA DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMAO
DIRETOR
DE SERVIÇOS CARTOGRAFICOS

Solid Weight For Deduction
Main Deck

| Description | Compart. Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |
|----------------------------|-----------------|-------------|-------------------|-------------------|-------------------|
| box letartre | | 181 | 35.000 | 2.800 | 43.200 |
| box letartre and bender | | 91 | 35.000 | 2.800 | 43.200 |
| box | | 91 | 35.700 | 4.800 | 43.200 |
| rallings for anti foouling | | 141 | 29.000 | 12.000 | 42.800 |
| BLIND 0.65m | | 31 | 33.500 | 17.000 | 43.350 |

EXTERIOR AREA: (ZONE M3)

| | | | | |
|-------------------------------|------|--------|---------|--------|
| HP FLARE TA541201 | 1542 | 54.600 | -18.600 | 49.800 |
| LP FLARE TA541202 | 907 | 52.900 | -19.800 | 49.800 |
| FLARE IGNITION CRATE 389A0452 | 453 | 52.700 | -19.800 | 49.000 |
| lub oil barrels | 3539 | 51.600 | -16.000 | 49.200 |
| pipe hanger | 150 | 59.000 | -26.000 | 43.400 |
| pipe 2" | 66 | 59.000 | -19.000 | 43.400 |
| pipe 90 | 43 | 60.000 | -26.000 | 43.400 |
| pipe 48mm | 26 | 53.000 | -36.600 | 42.700 |
| pipe 62mm | 72 | 53.000 | -36.600 | 42.700 |
| pipe 48mm | 82 | 65.000 | -19.000 | 42.700 |
| pipe 33mm | 16 | 65.000 | -19.000 | 42.700 |
| Air compressor | 230 | 45.000 | 20.000 | 43.000 |
| generator | 2500 | 43.500 | -30.000 | 43.400 |
| electrical wire | 613 | 48.000 | 35.000 | 43.000 |

EXTERIOR AREA: (ZONE M4)

| | | | | |
|------------|-----|--------|--------|--------|
| valves | 180 | 53.000 | 18.000 | 43.800 |
| pipes 60mm | 158 | 53.000 | 17.000 | 44.000 |
| pipe90mm | 41 | 51.000 | 32.000 | 42.700 |
| supprt | 82 | 60.000 | 18.000 | 45.800 |
| supprt | 80 | 49.000 | 24.000 | 42.800 |
| basket | 180 | 62.000 | 21.000 | 43.000 |

EXTERIOR AREA: (ZONE M5)

| | | | | |
|----------------|-----|---------|---------|--------|
| support | 15 | 98.000 | 34.000 | 44.400 |
| pipes | 15 | 104.000 | 30.000 | 44.400 |
| bolts and nuts | 60 | 102.000 | -24.000 | 44.400 |
| support | 60 | 102.000 | -14.000 | 44.400 |
| pipes 2 1/2 | 204 | 96.000 | -32.000 | 51.600 |
| pipes 2 | 72 | 96.000 | -32.000 | 51.600 |
| pipe | 60 | 80.000 | -20.000 | 51.600 |
| pipe | 100 | 77.000 | -20.000 | 51.600 |
| pipe | 120 | 74.000 | -20.000 | 51.600 |
| rallings | 12 | 91.000 | -16.000 | 51.600 |
| step grating | 50 | 73.000 | -16.000 | 42.800 |
| pipe 170mm | 331 | 100.000 | -8.000 | 42.800 |
| pipe 170mm | 242 | 100.000 | -8.000 | 42.800 |
| pipe 170mm | 117 | 100.000 | -8.000 | 42.800 |

CÓPIA DE DOCUMENTO ORIGINAL

**Solid Weight For Deduction
Main Deck**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|--|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| <i>pipe 170mm</i> | | 135 | 100.000 | -8.000 | 42.800 |
| <i>pipe 100mm</i> | | 86 | 100.000 | -8.000 | 42.800 |
| <i>pipe 100mm</i> | | 81 | 100.000 | -8.000 | 42.800 |
| <i>pipe 100mm</i> | | 36 | 100.000 | -8.000 | 42.800 |
| <i>pipe 100mm</i> | | 28 | 100.000 | -8.000 | 42.800 |
| <i>pipe 1 "</i> | | 18 | 100.000 | -8.000 | 42.800 |
| <i>pipe 2"</i> | | 329 | 99.000 | -12.000 | 42.800 |
| <i>raillings</i> | | 15 | 96.000 | -12.000 | 43.000 |
| <i>pipe 170mm</i> | | 138 | 90.000 | -9.000 | 42.800 |
| <i>blind and reducer</i> | | 90 | 86.000 | 12.000 | 43.600 |
| <i>flexible</i> | | 314 | 74.000 | -6.000 | 42.800 |
| EXTERIOR AREA: (ZONE M6) | | | | | |
| Nuovo Pignone funnel cover TRAIN A B C | | 243 | 87.500 | 9.200 | 60.850 |
| TRAIN A: | | | | | |
| BLIND 790 DIAM | | 39 | 78.000 | -7.500 | 45.450 |
| Heat exchanger protection | | 10 | 77.500 | -6.200 | 45.400 |
| <i>pipe 33mm</i> | | 20 | 77.000 | -8.000 | 43.900 |
| <i>pipe 60mm</i> | | 32 | 100.500 | -5.000 | 43.600 |
| <i>Tubing</i> | | 350 | 97.000 | -3.200 | 43.200 |
| scrubber missing bolts and screw | | 38 | 83.000 | 0.000 | 45.200 |
| maritima | | 35 | 104.000 | 0.000 | 47.200 |
| wooden locker | | 106 | 78.500 | 4.000 | 45.200 |
| locker contain | | 60 | 78.500 | 4.000 | 44.400 |
| <i>pipe 1 1/2 ced 40</i> | | 38 | 78.400 | 3.500 | 46.700 |
| <i>red pipe 75mm</i> | | 54 | 79.000 | 2.000 | 54.700 |
| <i>red pipe 45mm</i> | | 10 | 84.000 | 2.000 | 54.700 |
| <i>red pipe 90mm</i> | | 15 | 90.000 | -8.000 | 54.700 |
| <i>bulk tubing to be weighed</i> | | 324 | 77.000 | 3.500 | 54.700 |
| <i>ladder for weight shift</i> | | 126 | 106.000 | -3.000 | 42.900 |
| TRAIN B: | | | | | |
| <i>Cable trays</i> | | 36 | 98.000 | 6.000 | 44.900 |
| <i>cales trays</i> | | 18 | 90.000 | 9.200 | 44.200 |
| Heat exchanger protection | | 10 | 77.500 | 8.500 | 45.400 |
| <i>pipe 33mm</i> | | 20 | 77.000 | 7.000 | 43.900 |
| plywood box | | 13 | 80.400 | 8.800 | 45.100 |
| raillings | | 25 | 83.000 | 21.000 | 44.100 |
| <i>pipe 1 1/2 ced 40</i> | | 28 | 76.000 | 19.000 | 46.700 |
| <i>pipe 1 1/2 ced 40</i> | | 15 | 76.000 | 19.000 | 46.700 |
| <i>pipe 1 1/2 ced 40</i> | | 21 | 76.000 | 19.500 | 46.700 |
| <i>copper 1"</i> | | 22 | 81.000 | 19.500 | 46.700 |
| <i>copper 1 3/4"</i> | | 12 | 81.000 | 19.500 | 46.700 |
| <i>red pipe 90mm</i> | | 12 | 78.000 | 19.500 | 46.700 |
| raillings | | 113 | 87.000 | 17.000 | 50.000 |
| <i>red pipe 75mm</i> | | 54 | 82.000 | 17.000 | 55.200 |

**Solid Weight For Deduction
Main Deck**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|---------------------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| red pipe 45mm | | 10 | 82.000 | 17.000 | 55.200 |
| raillings | | 27 | 77.000 | 17.000 | 55.200 |
| raillings | | 32 | 75.000 | 14.500 | 55.200 |
| light support | | 91 | 75.000 | 17.500 | 55.000 |
| TRAIN C: | | | | | |
| raillings | | 36 | 100.000 | 22.500 | 43.300 |
| pipe 90 mm | | 28 | 87.000 | 22.500 | 42.800 |
| pipe 2 1/2 | | 52 | 84.000 | 23.000 | 43.500 |
| pipe 2 1/2 | | 52 | 85.000 | 22.500 | 42.700 |
| pipe 90 mm | | 105 | 85.000 | 22.500 | 42.700 |
| pipe 90 mm | | 44 | 85.000 | 22.500 | 42.700 |
| pipe 90 mm | | 32 | 85.000 | 22.500 | 42.700 |
| angle 5x3x1/4 | | 35 | 86.000 | 22.500 | 42.700 |
| pipe 33mm | | 27 | 77.000 | 22.500 | 43.700 |
| pipe 1 1/2 ced 40 | | 6 | 77.000 | 22.500 | 43.700 |
| Heat exchanger protection | | 10 | 77.500 | 23.500 | 45.400 |
| raillings | | 20 | 86.000 | 21.500 | 45.100 |
| bolts and nuts | | 45 | 77.000 | 32.000 | 44.100 |
| raillings | | 84 | 90.000 | 33.000 | 44.600 |
| raillings | | 59 | 89.000 | 35.000 | 47.300 |
| pipe 1 1/2 ced 40 | | 69 | 77.000 | 34.000 | 46.700 |
| pipe 33mm | | 35 | 77.000 | 34.000 | 46.700 |
| maritima | | 35 | 82.000 | 35.500 | 57.500 |
| raillings | | 73 | 89.000 | 32.000 | 55.100 |
| red pipe 75mm | | 54 | 79.000 | 32.000 | 54.800 |
| red pipe 45mm | | 10 | 79.000 | 32.000 | 54.800 |
| galvaniser | | 226 | 85.000 | 28.000 | 43.200 |
| bolts box | | 1000 | 99.400 | 27.500 | 43.122 |
| bolts and nut box | | 400 | 100.400 | 30.800 | 43.210 |
| container | | 5400 | 96.500 | 29.500 | 43.700 |
| container | | 7400 | 96.500 | 32.000 | 43.700 |
| supprt on container | | 82 | 96.000 | 32.000 | 45.400 |
| gard on container | | 298 | 96.000 | 32.000 | 45.400 |
| Total Main Deck | | | | | |
| | | 356912 | 58.860 | 25.595 | 44.148 |

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DIVISÃO DE SERVIÇOS GERAIS



**Solid Weight For Deduction
Upper Deck**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

| | | | | | |
|--|--------------|---|-------|-------|-------|
| EMERG. GEN'R CTL RM & FAN ROOM: | U3013 | | | | |
| NO DEDUCTION | | 0 | 0.000 | 0.000 | 0.000 |

| | |
|--|--------------|
| CENTRAL CAISSON AREA (DRILL FL.): | U0001 |
| NO DEDUCTION | |

EXTERIOR ZONES:
NO DEDUCTION

| | | | | |
|-------------------------|----------|--------------|--------------|--------------|
| Total Upper Deck | 0 | 0.000 | 0.000 | 0.000 |
|-------------------------|----------|--------------|--------------|--------------|

É CÓPIA FIEL DO DOCUMENTO ORIGINAL:
JOSE CARLOS PIRES DE LIMA
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS

Solid Weight For Deduction
Chain Lockers & Mooring Lines

| Description | Winch
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-----------------------------------|-----------------|----------------|-------------------------|-------------------------|-------------------------|
| CHAIN IN CHAIN LOCKER NO.9P, AFT | NO.1 | 14079 | 91.050 | -33.480 | 12.800 |
| CHAIN IN CHAIN LOCKER NO.2aP, FWD | NO.5 | 37003 | 31.130 | -30.500 | 3.520 |
| CHAIN IN CHAIN LOCKER NO.6P, FWD | NO.6 | 81406 | 26.310 | -31.120 | 16.190 |
| CHAIN IN CHAIN LOCKER NO.2bP, FWD | NO.7 | 68410 | 25.260 | -30.500 | 4.600 |
| CHAIN IN CHAIN LOCKER NO.10P, FWD | NO.8 | 72381 | 21.730 | -33.480 | 13.720 |
| CHAIN IN CHAIN LOCKER NO.3aS, FWD | NO.10 | 68410 | 25.260 | 30.500 | 4.600 |
| CHAIN IN CHAIN LOCKER NO.3bS, FWD | NO.12 | 22743 | 31.130 | 30.500 | 2.500 |
| CHAIN IN CHAIN LOCKER NO.12S, AFT | NO.16 | 24007 | 91.050 | 33.480 | 12.800 |
| | | | | | |
| MOORING LINE P8 | NO.1 | 10300 | 91.700 | -38.000 | 18.290 |
| MOORING LINE P4 | NO.5 | 10300 | 35.310 | -38.000 | 18.290 |
| MOORING LINE S8 | NO.16 | 10300 | 91.700 | 38.000 | 18.290 |
| MOORING LINE S4 | NO.12 | 10300 | 35.310 | 38.000 | 18.290 |
| | | | | | |
| CHAIN CHESAR (4) | | 6280 | 56.400 | 0.000 | 39.600 |
| MAIN LINE WIRE, DIA.96mm | | 1008 | 56.400 | 0.000 | 23.300 |
| PRE-TENSION CHAIN 54mm | | 2210 | 56.400 | 0.000 | 23.300 |

| | | | | |
|-------------------------------------|--------|--------|---------|--------|
| Total Chain Lockers & Mooring Lines | 439134 | 35.639 | -11.521 | 10.685 |
|-------------------------------------|--------|--------|---------|--------|

É CÚPIA FEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTES GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORÁIS

Solid Weight For Addition
Summary

| Description | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|---------------------------|----------------|-------------------------|-------------------------|-------------------------|
| Pontoons | 1827 | 52.285 | -29.869 | 6.082 |
| Columns | 0 | 0.000 | 0.000 | 0.000 |
| Central Caisson & Bracing | 4476 | 40.274 | -3.537 | 14.077 |
| Spider Deck | 318 | 79.026 | -6.639 | 30.883 |
| Inner Bottom | 0 | 0.000 | 0.000 | 0.000 |
| Tank Top | 4099 | 43.438 | 24.786 | 38.200 |
| Second Deck | 420 | 53.819 | -5.143 | 39.938 |
| Main Deck | 63944 | 79.207 | 3.772 | 49.239 |
| Upper Deck | 14911 | 57.445 | -2.242 | 88.420 |
| Electric Wire | 3237 | 69.923 | 0.689 | 47.471 |

| | | | | |
|---------------------------------|-------|--------|-------|--------|
| Total Solid Weight For Addition | 93232 | 71.320 | 2.541 | 52.320 |
|---------------------------------|-------|--------|-------|--------|

É CÓPIA DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GOMES

DIRETOR

DIVISÃO DE SERVIÇOS GERAIS

**Solid Weight For Addition
Pontoons**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

PORT PONTOON: (AFT)

THRUSTER ROOM:

NO ADDITION 0 0.000 0.000 0.000

THRUSTER ROOM (MEZZANINE):

NO ADDITION

S.W. PUMP ROOM:

NO ADDITION

UPPER PUMP ROOM (MEZZANINE):

NO ADDITION

WATER INJ. EQUIP. ROOM:

NO ADDITION

ACCESS TRUNK :

NO ADDITION

PORT PONTOON: (FWD)

WATER INJ. EQUIP. ROOM:

NO ADDITION

S.W. PUMP ROOM:

NO ADDITION

UPPER PUMP ROOM (MEZZANINE):

NO ADDITION

THRUSTER ROOM:

NO ADDITION

É CÓPIA FIEL DO DOCUMENTO ORIGINAL:

JOSE CARLOS PIMENTEL BUCARAO
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFIAIS

**Solid Weight For Addition
Pontoons**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

THRUSTER ROOM (MEZZANINE):
NO ADDITION

PORT PONTOON: (VOID SPACES)

VOID SPACE NO.27:
NO ADDITION

VOID SPACE NO.28:
NO ADDITION

VOID SPACE NO.50:
NO ADDITION

VOID SPACE NO.51:
NO ADDITION

VOID SPACE NO.61:
NO ADDITION

STARBOARD PONTOON: (AFT)

THRUSTER ROOM:
NO ADDITION

THRUSTER ROOM (MEZZANINE):
NO ADDITION

S.W. PUMP ROOM:
NO ADDITION

UPPER PUMP ROOM (MEZZANINE):
NO ADDITION

É COPIA DO DOCUMENTO ORIGINAL
DIVISÃO DE SERVIÇOS CARTÓGRAFOS



**Solid Weight For Addition
Pontoons**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

WATER INJ. EQUIP. ROOM:
NO ADDITION

ACCESS TRUNK:
NO ADDITION

STARBOARD PONTOON: (FWD)

WATER INJ. EQUIP. ROOM:
NO ADDITION

S.W. PUMP ROOM:
NO ADDITION

UPPER PUMP ROOM (MEZZANINE):
NO ADDITION

THRUSTER ROOM:
NO ADDITION

THRUSTER ROOM (MEZZANINE):
NO ADDITION

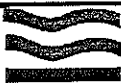
STARBOARD PONTOON: (VOID SPACES)

VOID SPACE NO.27:
NO ADDITION

VOID SPACE NO.28:
NO ADDITION

VOID SPACE NO.50:
NO ADDITION

É Cópia do Documento Original:
JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARITATIVOS

| | | | | | |
|--|-----------------|---|-------------------|---|-------------------|
| <div>INDUSTRIES</div> <div>DAVIE</div> <div></div> | | <div>Petrobras - 36</div> <div>Inclining Test</div> | | <div></div> <div>NOBLE DENTON</div> | |
| <div>Solid Weight For Addition</div> <div>Pontoons</div> | | | | | |
| Description | Compart. Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |

VOID SPACE NO.51:
NO ADDITION

VOID SPACE NO.61:
NO ADDITION

EXTERIOR ZONE, PORT PONTOON:

| | | | | |
|--|-----|--------|---------|-------|
| SCR OIL RO1 | 657 | 49.438 | -35.690 | 7.150 |
| SCR GAZ RG1 | 872 | 72.298 | -35.690 | 7.150 |
| DOUBLER PLATES FOR TRANSPORTATION (10) | 298 | 0.000 | 0.000 | 0.600 |

| | | | | |
|-----------------------|-------------|---------------|----------------|--------------|
| Total Pontoons | 1827 | 52.285 | -29.869 | 6.082 |
|-----------------------|-------------|---------------|----------------|--------------|

É CÓPIA FIEL DO DOCUMENTO ORIGINAL:
 JOSE CARLOS PINHEIRO GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS

Solid Weight For Addition
Columns

| Description | Compарт.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

COLUMN PORT AFT:**DEARATOR TWR/DRAINS ST. PP ROOM:**

| | | | | |
|-------------|---|-------|-------|-------|
| NO ADDITION | 0 | 0.000 | 0.000 | 0.000 |
|-------------|---|-------|-------|-------|

STAIR CASING:

NO ADDITION

VOID SPACE NO.30:

NO ADDITION

VOID SPACE NO.30A:

NO ADDITION

VOID SPACE NO.31:

NO ADDITION

VOID SPACE NO.33 PORT1:

NO ADDITION

VOID SPACE NO.33 PORT2:

NO ADDITION

VOID SPACE NO.45:

NO ADDITION

VOID SPACE NO.45A:

NO ADDITION

VOID SPACE NO.63:

NO ADDITION

VOID SPACE NO.65:

NO ADDITION

É CÓPIA FIEL DO DOCUMENTO ORIGINAL:JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS GERAIS

Solid Weight For Addition
Columns

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

COLUMN PORT FWD:

"P" TANKS +SEA. TREAT. UNIT ROOM:
NO ADDITION

STAIR CASING:
NO ADDITION

VOID SPACE NO.29:
NO ADDITION

VOID SPACE NO.29A:
NO ADDITION

VOID SPACE NO.32 PORT1:
NO ADDITION

VOID SPACE NO.32 PORT2:
NO ADDITION

VOID SPACE NO.32 PORT3:
NO ADDITION

VOID SPACE NO.46:
NO ADDITION

VOID SPACE NO.46A:
NO ADDITION

VOID SPACE NO.62:
NO ADDITION

VOID SPACE NO.64:

É CÓPIA FIEL DO DOCUMENTO ORIGINAL.

JOSE CARLOS PIMENTEL OLIVEIRA
DIRETOR
DIVISÃO DE SERVIÇOS ADMINISTRATIVOS

Solid Weight For Addition
Columns

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

NO ADDITION

COLUMN STARBOARD AFT:

DEARATOR TWR/DRAINS ST. PP ROOM:

NO ADDITION

STAIR CASING:

NO ADDITION

VOID SPACE NO.30:

NO ADDITION

VOID SPACE NO.30A:

NO ADDITION

VOID SPACE NO.31:

NO ADDITION

VOID SPACE NO.33 STBD1:

NO ADDITION

VOID SPACE NO.33 STBD2:

NO ADDITION

VOID SPACE NO.45:

NO ADDITION

VOID SPACE NO.45A:

NO ADDITION

VOID SPACE NO.63:

NO ADDITION

É CÓPIA FIEL DO DOCUMENTO ORIGINALJOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

**Solid Weight For Addition
Columns**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

VOID SPACE NO.65:
NO ADDITION

COLUMN STARBOARD FWD:

"P" TANKS +SEA. TREAT. UNIT ROOM:
NO ADDITION

STAIR CASING:
NO ADDITION

VOID SPACE NO.29:
NO ADDITION

VOID SPACE NO.29A:
NO ADDITION

VOID SPACE NO.32 STBD1:
NO ADDITION

VOID SPACE NO.32 STBD2:
NO ADDITION

VOID SPACE NO.32 STBD3:
NO ADDITION

VOID SPACE NO.46:
NO ADDITION

VOID SPACE NO.46A:
NO ADDITION

VOID SPACE NO.62:

É CÓPIA DO DOCUMENTO ORIGINAL
JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS

Solid Weight For Addition
Columns

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

NO ADDITION

VOID SPACE NO.64:
NO ADDITION

| | | | | |
|---------------|---|-------|-------|-------|
| Total Columns | 0 | 0.000 | 0.000 | 0.000 |
|---------------|---|-------|-------|-------|

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS



**Solid Weight For Addition
Central Caisson & Bracings**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

CENTRAL CAISSON:

VOID SPACE NO.34:

NO ADDITION

0 0.000 0.000 0.000

VOID SPACE NO.35:

NO ADDITION

VOID SPACE NO.36:

NO ADDITION

VOID SPACE NO.56:

NO ADDITION

VOID SPACE NO.57:

NO ADDITION

VOID SPACE NO.60:

LIFTING PUMPS SUCTION PIPES (9)

2130 55.390 -2.750 17.080

BRACINGS:

VOID SPACE NO.52 PORT:

NO ADDITION

VOID SPACE NO.52 STBD:

NO ADDITION

VOID SPACE NO.53 PORT:

NO ADDITION

VOID SPACE NO.53 STBD:

NO ADDITION

VOID SPACE NO.54:

NO ADDITION

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DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



**Solid Weight For Addition
Central Caisson & Bracings**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

**VOID SPACE NO.55:
NO ADDITION**

**VOID SPACE NO.58 PORT:
NO ADDITION**

**VOID SPACE NO.58 STBD:
NO ADDITION**

**VOID SPACE NO.59 PORT:
NO ADDITION**

**VOID SPACE NO.59 STBD:
NO ADDITION**

EXTERIOR ZONES:

VOID SPACE NO.55, FWD BRACING:

| | | | | |
|-------|-----|--------|---------|--------|
| SPOOL | 294 | 26.550 | -16.500 | 11.350 |
| SPOOL | 294 | 26.550 | -13.500 | 11.350 |
| SPOOL | 488 | 26.550 | -14.500 | 11.350 |
| SPOOL | 488 | 26.550 | -11.500 | 11.350 |
| SPOOL | 294 | 26.550 | 13.500 | 11.350 |
| SPOOL | 488 | 26.550 | 15.500 | 11.350 |

| | | | | |
|---|-------------|---------------|---------------|---------------|
| Total Central Caisson & Bracings | 4476 | 40.274 | -3.537 | 14.077 |
|---|-------------|---------------|---------------|---------------|

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JOSÉ CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



**Solid Weight For Addition
Spider Deck**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

ZONE R1 (FWD PORT QUADRANT):
NO ADDITION

ZONE R2 (FWD STBD QUADRANT):
NO ADDITION

ZONE R3 (AFT PORT QUADRANT):

| | | | | | |
|----------------------------------|--|-----|--------|---------|--------|
| PIPE | | 193 | 92.000 | -7.000 | 30.800 |
| VALVE WITH EXPENDLE FOR PROD. C. | | 50 | 62.800 | -15.200 | 29.450 |

ZONE R4 (AFT STBD QUADRANT):
NO ADDITION

GENERAL AREA:

| | | | | | |
|------------------------|--|----|--------|-------|--------|
| SAFETY EQUIPMENT BOXES | | 75 | 56.388 | 0.000 | 32.052 |
|------------------------|--|----|--------|-------|--------|

| | | | | | |
|--------------------------|--|------------|---------------|---------------|---------------|
| Total Spider Deck | | 318 | 79.026 | -6.639 | 30.883 |
|--------------------------|--|------------|---------------|---------------|---------------|

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JOSE CARLOS PIMENTEL GUARINO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



**Solid Weight For Addition
Inner Bottom**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

VOID SPACE NO.37 PORT:
NO ADDITION

0 0.000 0.000 0.000

VOID SPACE NO.37 STBD:
NO ADDITION

VOID SPACE NO.38 PORT:
NO ADDITION

VOID SPACE NO.38 STBD:
NO ADDITION

VOID SPACE NO.39:
NO ADDITION

VOID SPACE NO.40:
NO ADDITION

VOID SPACE NO.41:
NO ADDITION

VOID SPACE NO.42 PORT:
NO ADDITION

VOID SPACE NO.42 STBD:
NO ADDITION

VOID SPACE NO.43:
NO ADDITION

VOID SPACE NO.44:
NO ADDITION

É CÓPIA FIEL DO DOCUMENTO ORIGINAL.

| | | | | |
|--------------------|---|-------|-------|-------|
| Total Inner Bottom | 0 | 0.000 | 0.000 | 0.000 |
|--------------------|---|-------|-------|-------|

JOSÉ CARLOS PIMENTEL GUSMÃO

0.000

0.000

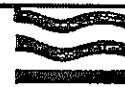


**Solid Weight For Addition
Tank Top**

| Description | Compарт.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|---|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| MECH. STORE NO.1:
NO ADDITION | T5011 | | | | |
| MECH. STORE NO.2:
NO ADDITION | T5009 | | | | |
| MECH. WORKSHOP:
NO ADDITION | T5007 | | | | |
| CORRIDOR :
NO ADDITION | T5015 | | | | |
| STAIRS:
NO ADDITION | T5023 | | | | |
| FIRE PUMP ROOM NO.1:
NO ADDITION | T5003 | | | | |
| FRESHWATER PUMP ROOM (PORT):
NO ADDITION | T5005 | | | | |
| AUXILIARY MACHINERY ROOM:
NO ADDITION | T5001 | | | | |
| AUXILIARY MACHINERY ROOM:
NO ADDITION | T5002 | | | | |
| ENGINE CONTROL ROOM:
NO ADDITION | T5027 | | | | |
| F.O. PURIFIER & TANK ROOM:
NO ADDITION | T5021 | | | | |
| ELECTRICAL WORKSHOP: | T5017 | | | | |

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JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓRIAS



**Solid Weight For Addition
Tank Top**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

NO ADDITION

ELECT. STORAGE ROOM: T5019
NO ADDITION

ELECT. STORE: T5013
NO ADDITION

CORRIDOR: T5025
NO ADDITION

CORRIDOR: T5025A
NO ADDITION

GENERATOR ROOM NO.1: T3043
NO ADDITION

GENERATOR ROOM NO.2: T3053
NO ADDITION

SWITCHBOARD ROOM NO.1: T3035
NO ADDITION

SWITCHBOARD ROOM NO.2: T3033
NO ADDITION

CORRIDOR: T3031
NO ADDITION

PURIFIER ROOM: T6004
NO ADDITION

FRESHWATER PUMP ROOM (STBD): T6006
NO ADDITION

É Cópia fiel do documento original.



**Solid Weight For Addition
Tank Top**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

FIRE PUMP ROOM NO.4:
NO ADDITION T6008

CORRIDOR & STAIRS:
NO ADDITION T6010

PRODUCTION WAREHOUSE NO.4:
NO ADDITION T6012

CORRIDOR & STAIRS:
NO ADDITION T6014

PRODUCTION WAREHOUSE NO.5:
NO ADDITION T6020

PRODUCTION WAREHOUSE NO.6:
NO ADDITION T6016

CORRIDOR:
NO ADDITION T6018

HYDRAULIC WORKSHOP:
NO ADDITION T6024

HYDRAULIC POWERPACK ROOM:
NO ADDITION T6022

VENTILLATION MCC ROOM:
NO ADDITION T6026

CORRIDOR & STAIRS:
NO ADDITION T6028

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JOSE CARLOS PINHEIRO GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFIAIS



**Solid Weight For Addition
Tank Top**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

INSTRUMENTATION WORKSHOP:
NO ADDITION

T6030

CORRIDOR:
NO ADDITION

T6032

GENERATOR ROOM NO.3:
POWER TURBINE
GAS GENERATOR
SPREADER BEAM

T4084

| | | | |
|------|--------|--------|--------|
| 1134 | 48.768 | 31.000 | 38.576 |
| 1770 | 48.768 | 31.000 | 38.576 |
| 159 | 48.768 | 31.000 | 38.576 |

GENERATOR ROOM NO.4:
NO ADDITION

T4082

CHEMICAL INJECTION ROOM:
NO ADDITION

T4074

DELUGE PACKAGE ROOM NO.1:
NO ADDITION

T4116

NO ADDITION

DELUGE PACKAGE ROOM NO.2:
NO ADDITION

T4118

DELUGE PACKAGE ROOM NO.3:
NO ADDITION

T4126

DELUGE PACKAGE ROOM NO.4:
NO ADDITION

T4130

GLYCOL SUMP TANK NO.1:
NO ADDITION

T4124

GLYCOL SUMP TANK NO.2:
NO ADDITION

T4128

É CÚPIA FEL DO DOCUMENTO ORIGINAL.

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR

DIVISÃO DE SERVIÇOS CASTORIAS
PL-548.35-1020-972-NSD-946



Solid Weight For Addition
Tank Top

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

CHANGE ROOM:
NO ADDITION

T1034

CORRIDOR:
NO ADDITION

T1037

A/C COMPRESSORS & MCC RM:
NO ADDITION

T1039

BATH:
NO ADDITION

T1041

CRANE OPERATOR CABIN (2):
BED LADDER

T1045

5 39.624 -14.000 37.576

STOREMAN CABIN (2):
CEILING PANEL

T1047

5 42.672 -16.000 39.076

WORKOVER SERV. CABIN (2):
NO ADDITION

T1049

LOCKER:
NO ADDITION

T1051

CHANGING ROOM & SAUNA :
NO ADDITION

T1055

TOILETS & SHOWERS :
NO ADDITION

T1057

GYM:
NO ADDITION

T1059



**Solid Weight For Addition
Tank Top**

| Description | Compарт.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|--|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| LAB. TECHNICIAN CABIN (2):
CHAIR (1) | T1061 | 8 | 39.624 | -24.000 | 37.000 |
| WELDER CABIN (2):
NO ADDITION | T1063 | | | | |
| WORKOVER SERV. CABIN (2):
CHAIRS (2) | T1065 | 16 | 32.004 | -2.000 | 37.076 |
| WORKOVER SERV. CABIN (2):
LADDER | T1067 | 5 | 32.004 | -4.000 | 37.576 |
| WORKOVER SERV. CABIN (2):
NO ADDITION | T1069 | | | | |
| WORKOVER SERV. CABIN (2):
NO ADDITION | T1071 | | | | |
| WORKOVER SERV. CABIN (2):
NO ADDITION | T1073 | | | | |
| ROUGHNECK CABIN (2):
NO ADDITION | T1075 | | | | |
| ROUGHNECK CABIN (2):
NO ADDITION | T1077 | | | | |
| ROUGHNECK CABIN (2):
NO ADDITION | T1079 | | | | |
| SEAMEN CABIN (2):
NO ADDITION | T1081 | | | | |

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL CUSMÃO
DIRETOR

DIVISÃO DE SERVIÇOS CARTÓRIOS
RL-3010.36-1320-974-NBD-946

**Solid Weight For Addition
Tank Top**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

BROM LOCKER:
NO ADDITION

T1083

SPARE CABIN (2):
NO ADDITION

T1085

SPARE CABIN (2):
NO ADDITION

T1087

SEAMEN CABIN (2):
NO ADDITION

T1089

SEAMEN CABIN (2):
NO ADDITION

T1091

DRILLER CABIN (2):
NO ADDITION

T1093

LINEN LOCKER:
NO ADDITION

T1095

FAN ROOM:
NO ADDITION

T1097

ASSIST DRILLER CABIN (2):
NO ADDITION

T1099

SUB-SEA ENG. CABIN (2):
NO ADDITION

T1101

TOOL PUSHER CABIN (2):
NO ADDITION

T1103

ROUSTABOUT CABIN (2):

T1105

É CÓPIA DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUIMARÃES
DIRETOR
DIVISÃO DE SERVIÇOS CAPITAIS



**Solid Weight For Addition
Tank Top**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

NO ADDITION

| | | | | | |
|-----------------------|-------|---|--------|--------|--------|
| ROUSTABOUT CABIN (2): | T1107 | | | | |
| CHAIR (1) | | 8 | 24.384 | -4.000 | 37.076 |

| | | | | | |
|-----------------------|-------|----|--------|--------|--------|
| ROUSTABOUT CABIN (2): | T1109 | | | | |
| CHAIRS (2) | | 16 | 24.384 | -2.000 | 37.076 |

| | | | | | |
|--------------------|-------|--|--|--|--|
| TOILETS & SHOWERS: | T2036 | | | | |
| NO ADDITION | | | | | |

| | | | | | |
|--------------------|-------|--|--|--|--|
| CORRIDOR & STAIRS: | T2037 | | | | |
| NO ADDITION | | | | | |

| | | | | | |
|----------------|-------|--|--|--|--|
| STORAGE AREA : | T2038 | | | | |
| NO ADDITION | | | | | |

| | | | | | |
|---------------------------------------|-------|-----|--------|-------|--------|
| CENTRAL/PROD. CONTROL ROOM: | T2040 | | | | |
| TELECOM E.A.E. (398A0639, 13/13) | | 164 | 27.432 | 7.000 | 37.076 |
| TELECOM EQUIP. E.A.E. 398A0686, 9/13 | | 42 | 27.432 | 7.000 | 37.076 |
| TELECOM EQUIP. E.A.E. 398A0686, 10/13 | | 78 | 27.432 | 7.000 | 37.076 |
| TELECOM EQUIP. E.A.E. 398A0686, 6/13 | | 86 | 27.432 | 7.000 | 37.076 |
| TELECOMMUNICATION EQUIP.FROM E.A.E. | | 108 | 27.432 | 7.000 | 37.076 |
| TELECOMMUNICATION EQUIP.FROM E.A.E. | | 108 | 27.432 | 7.000 | 37.076 |
| ABB EQUIPMENT | | 363 | 27.432 | 7.000 | 37.076 |

| | | | | | |
|-------------|-------|--|--|--|--|
| S.C.R: | T2042 | | | | |
| NO ADDITION | | | | | |

| | | | | | |
|-------------------------|-------|---|--------|--------|--------|
| INST. TECHN. CABIN (2): | T2044 | | | | |
| CHAIRS (1) | | 8 | 30.500 | 16.000 | 37.000 |

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS FERNANDES GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS



**Solid Weight For Addition
Tank Top**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|---|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
| CATERING CABIN:
CHAIR (1) | T2046 | 8 | 30.500 | 20.000 | 37.000 |
| CHIEF STEWARD CABIN (2):
NO ADDITION | T2048 | | | | |
| SEAMEN CABIN (2):
NO ADDITION | T2050 | | | | |
| SPARE CABIN:
NO ADDITION | T2054 | | | | |
| SPARE CABIN:
NO ADDITION | T2056 | | | | |
| SEAMEN CABIN (2):
NO ADDITION | T2058 | | | | |
| CATERING CABIN (2):
NO ADDITION | T2060 | | | | |
| CATERING CABIN:
CHAIR (1) | T2062 | 8 | 21.336 | 22.000 | 37.000 |
| LINEN LOCKER:
NO ADDITION | T2064 | | | | |
| FAN ROOM:
NO ADDITION | T2066 | | | | |
| INST. TECHNICIAN CABIN (2):
NO ADDITION | T2068 | | | | |

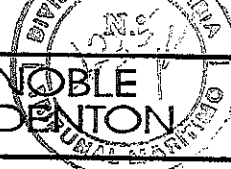
É CÓPIA FIEL DO DOCUMENTO ORIGINAL
JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

**Solid Weight For Addition
Tank Top**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|--|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| INST. TECHNICIAN CABIN (2):
NO ADDITION | T2070 | | | | |
| BRIDGE:
NO ADDITION | T2072 | | | | |
| STORAGE AREA:
NO ADDITION | T2080 | | | | |
| AIR LOCK:
NO ADDITION | T2111 | | | | |
| STORAGE AREA:
NO ADDITION | T2114 | | | | |
| PUMP STORE ROOM NO.1:
NO ADDITION | T0076 | | | | |
| PUMP STORE ROOM NO.2:
NO ADDITION | T0078 | | | | |
| CELLAR DECK AREA:
NO ADDITION | T0113 | | | | |
| AFT EXTENSION DECK PORT
NO ADDITION | T7000 | | | | |
| AFT EXTENSION DECK STBD
NO ADDITION | T8000 | | | | |
| Total Tank Top | | 4099 | 43.438 | 24.786 | 38.200 |

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

CARLOS ALBERTO CHESÃO
24/08/86
DIVISÃO DE SERVIÇOS CARTOGRAFAS



Solid Weight For Addition
Second Deck

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

AUX. MACHINERY SPACE:
NO ADDITION

S5001

WAREHOUSE:
NO ADDITION

S5003

WELDING SHOP:
NO ADDITION

S5005

CORRIDOR:
NO ADDITION

S5011

ELECTRONIC WORKSHOP:
NO ADDITION

S5013

CORRIDOR:
NO ADDITION

S5014

CORRIDOR:
NO ADDITION

S5017

OFFICE (MAINT'CE SUPERVISOR):
NO ADDITION

S5019

COFFEE SHOP:
CHAIRS (4)

S5021

24 72.390 -25.000 40.124

LAUNDRY:
NO ADDITION

S5023

AIR HANDLING RM :
NO ADDITION

S6002

PRODUCTION WAREHOUSE 1:

S6004

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS FERNANDES GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTEIRAS



**Solid Weight For Addition
Second Deck**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

NO ADDITION

PRODUCTION WAREHOUSE 2:
NO ADDITION S6006

I.A.S. UPS RM 1:
NO ADDITION S6007

WAREHOUSE OFFICE:
NO ADDITION S6008

BATTERY ROOM NO.1:
NO ADDITION S6009

PRODUCTION WAREHOUSE 3:
NO ADDITION S6010

CORRIDOR:
NO ADDITION S6012

I.A.S. UPS RM 2:
NO ADDITION S6014

STAIRS:
NO ADDITION S6015

BATTERY ROOM NO.2:
NO ADDITION S6016

COMPRESSOR CONTROL RM:
NO ADDITION S6018

CO 2 ROOM :
NO ADDITION S6020

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JOSE CARLOS PIMENTEL GUIMARÃES
DIRETOR
DIVISÃO DE SERVIÇOS CARTÓGRAFOS



**Solid Weight For Addition
Second Deck**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

**COMPRESSOR MCC RM :
NO ADDITION**

S6022

**CORRIDOR:
NO ADDITION**

S6024

**STAIRS:
NO ADDITION**

S6026

**CORRIDOR:
NO ADDITION**

S6028

**ELECT ' L EQUIPT RM:
NO ADDITION**

S6030

**MCC ROOM NO. 2:
NO ADDITION**

S3025

**MCC ROOM NO. 1 :
NO ADDITION**

S3027

**MEETING ROOM:
TELEVISION
PROJECTOR**

S3029

| | | | |
|----|--------|---------|--------|
| 30 | 48.768 | -13.000 | 40.624 |
| 30 | 48.768 | -13.000 | 40.624 |

**LAUNDRY / CHANGE ROOM:
NO ADDITION**

S3031

**CORRIDOR:
NO ADDITION**

S3033

**PLATFORM MANAGER OFFICE:
NO ADDITION**

S3035

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFIAIS



**Solid Weight For Addition
Second Deck**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

STAIRS:
NO ADDITION

S3037

TECHNICAL LIBRARY:
NO ADDITION

S3039

CHEMICAL INJECTION ROOM (MEZZ):
NO ADDITION

S4032

DELUGE PACKAGE RM (MEZZ):
NO ADDITION

S4034

DRYING ROOM:
NO ADDITION

S1030

MESS ROOM (CAFETERIA):
NO ADDITION

S1041

AUDITORIUM & MEETING ROOM:
TELEVISION
PROJECTOR

S1043

| | | | |
|----|--------|---------|--------|
| 30 | 39.624 | -13.000 | 40.624 |
| 30 | 39.624 | -13.000 | 40.624 |

TOILET / SHOWER:
NO ADDITION

S1045

TOILET:
NO ADDITION

S1047

OFFICE (PLATFORM ENGINEER):
NO ADDITION

S1049

OFFICE (PRODUCTION):
NO ADDITION

S1051

CÓPIA FIEL DO DOCUMENTO ORIGINAL

DESENVOLVIDO POR
NÓBIL DENTON
CARTÓGRAFIA



**Solid Weight For Addition
Second Deck**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

CORRIDOR:
NO ADDITION S1052

OFFICE (OPERATION):
NO ADDITION S1053

LOCKER:
NO ADDITION S1055

CCR OPERATOR CABIN:
NO ADDITION S1061

CCR OPERATOR CABIN:
NO ADDITION S1063

CCR OPERATOR CABIN:
NO ADDITION S1065

MCR OPERATOR CABIN:
NO ADDITION S1067

GAMES ROOM:
NO ADDITION S1069

OFFICE (WORKMEN):
NO ADDITION S1071

OFFICE (INDUSTRIAL SAFETY):
NO ADDITION S1073

LOCKER:
NO ADDITION S1075

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JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS



**Solid Weight For Addition
Second Deck**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

STAIRS:
NO ADDITION

S1077

RADIO OPERATOR CABIN (2):
NO ADDITION

S1079

MCR OPERATOR CABIN (2):
NO ADDITION

S1081

LINEN LOCKER:
NO ADDITION

S1083

FAN ROOM:
NO ADDITION

S1085

MAINT. SUPERINT. CABIN (1):
NO ADDITION

S1087

STABIL. OFFICER CABIN (2):
NO ADDITION

S1089

MEDIC CABIN (1):
NO ADDITION

S1091

HOSPITAL:
NO ADDITION

S1093

AIR LOCK:
NO ADDITION

S1095

CORRIDOR:
NO ADDITION

S1111

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JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

| | | | | | |
|---|--------------------|---|-------------------|---|-------------------|
| <div>INDUSTRIES</div> <div>DAVIE</div> <div></div> | | <div>Petrobras - 36</div> <div>Inclining Test</div> | | <div></div> <div>NOBLE DENTON</div> | |
| <div>Solid Weight For Addition</div> <div>Second Deck</div> | | | | | |
| Description | Compartment Number | Weight (kg) | LCG from Fr.0 (m) | TCG from C.L. (m) | VCG from B.L. (m) |

CORRIDOR:
NO ADDITION

S2033

GALLEY:
NO ADDITION

S2036

STORE (GALLEY):
NO ADDITION

S2038

TOILET:
NO ADDITION

S2040

FREEZING ROOM:
NO ADDITION

S2042

DRY STORE NO.2:
NO ADDITION

S2044

STAIRS:
NO ADDITION

S2046

AIR LOCK:
NO ADDITION

S2048

FAN ROOM:
NO ADDITION

S2050

STAIRS:
NO ADDITION

S2052

CG LOCKER:
NO ADDITION

S2054

ELECTRICAL SUPERV. CABIN (2):

S2056

É CÓPIA FIEL DO DOCUMENTO ORIGINAL:

JOSE CARLOS PIMENTEL GUIMARÃES
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFIAIS

Solid Weight For Addition
Second Deck

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

NO ADDITION

OPEN STORAGE (T.B.D): S2057
NO ADDITION

ELECTRICAL TECHN. CABIN (2): S2058
NO ADDITION

ELECTRICAL TECHN. CABIN (2): S2060
NO ADDITION

ELECTRICAL TECHN. CABIN (2): S2062
NO ADDITION

PROD. OPERATOR CABIN (2): S2064
NO ADDITION

PROD. OPERATOR CABIN (2): S2066
NO ADDITION

PROD. OPERATOR CABIN (2): S2068
NO ADDITION

PROD. OPERATOR CABIN (2): S2070
NO ADDITION

LOCKER: S2072
NO ADDITION

STAIRS: S2074
NO ADDITION

CATERING OFFICE: S2076
NO ADDITION

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CANTOARIAS

**Solid Weight For Addition
Second Deck**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|

PROD. SUPERVISOR CABIN (1): S2078
NO ADDITION

LINEN LOCKER: S2080
NO ADDITION

FAN ROOM: S2082
NO ADDITION

MARINE SUPERINT.CABIN (1): S2084
NO ADDITION

OFFSHORE INST. MAN.CABIN (1): S2086
NO ADDITION

MEN CABIN (2): S2088
NO ADDITION

MECH.TECHN.CABIN (2): S2090
NO ADDITION

MECH.TECHN.CABIN (2): S2092
NO ADDITION

CCR OPERATOR CABIN (2): S2094
NO ADDITION

FIRE PUMP ROOM NO. 3: S2096
NO ADDITION

CHILLING ROOM: S2100
NO ADDITION

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17
JOSE CARLOS PEREIRA / ASSINADO
DIRETOR
DIVISÃO DE SERVIÇOS CORPORAIS



**Solid Weight For Addition
Second Deck**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

CORRIDOR:
NO ADDITION

S2112

CENTRAL CAISSON AREA:
NO ADDITION

S0099

GENERAL AREA:

JUNCTION BOX ASSEMBLY, BE 102282, 3
HEAT TRAP NO.6

| | | | |
|-----|--------|-------|--------|
| 197 | 56.388 | 0.000 | 39.624 |
| 79 | 56.388 | 0.000 | 39.624 |

| | | | | | |
|--------------------------|--|------------|---------------|---------------|---------------|
| Total Second Deck | | 420 | 53.819 | -5.143 | 39.938 |
|--------------------------|--|------------|---------------|---------------|---------------|

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CANTORIAS



**Solid Weight For Addition
Main Deck**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

REC/BRIEF ARRIVAL DEPARTURE:
NO ADDITION

M1009

TOILET:
NO ADDITION

M1011

PASSAGEWAY:
NO ADDITION

M1013

VESTIBULE:
NO ADDITION

M1015

RADIO ROOM:
NO ADDITION

M1017

TELECOM EQUIPMENT ROOM:
NO ADDITION

M1019

FIRE PUMP RM NO. 2:
NO ADDITION

M1023

TELECOMS/UPS RM NO.1:
NO ADDITION

M1031

BATTERY RM NO.3:
NO ADDITION

M1035

UPS RM NO. B:
NO ADDITION

M1037

INCINERATOR:
NO ADDITION

M2008

MARINE STORE:
BOX NO.830 SPECIAL TOOLS
BOX NO.827 TANK & DETERGENT

M3003

| | | | |
|-----|--------|---------|--------|
| 260 | 52.578 | -13.500 | 43.172 |
| 430 | 52.578 | -13.500 | 43.172 |

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTA GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

| | | | | | |
|--|--------------------|---|-------------------------|---|-------------------------|
| <div>INDUSTRIES</div> <div>DAVIE</div> <div></div> | | <div>Petrobras - 36</div> <div>Inclining Test</div> | | <div></div> <div>NOBLE
DENTON</div> | |
| Solid Weight For Addition
Main Deck | | | | | |
| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |

| | | | | | |
|--|--|------|--------|---------|--------|
| Nuovo Pignone SPARE TURBINE COUPLING | | 1880 | 52.578 | -13.500 | 43.172 |
| ROLLERS-A (2) | | 306 | 52.578 | -13.500 | 43.172 |
| ROLLERS-B (2) | | 306 | 52.578 | -13.500 | 43.172 |
| SEA CHEST HATCHES | | 410 | 52.578 | -13.500 | 43.172 |
| SEA CHEST HATCHES | | 410 | 52.578 | -13.500 | 43.172 |
| SEA CHEST HATCHES | | 410 | 52.578 | -13.500 | 43.172 |
| SEA CHEST HATCHES | | 410 | 52.578 | -13.500 | 43.172 |
| ANSELL JONES TURNTABLE TRUCK, 398A0741 | | 275 | 52.578 | -13.500 | 43.172 |
| ANSELL JONES TURNTABLE TRUCK, 398A0743 | | 275 | 52.578 | -13.500 | 43.172 |
| ANSELL JONES TURNTABLE TRUCK, 398A0742 | | 275 | 52.578 | -13.500 | 43.172 |
| ANSELL JONES TURNTABLE TRUCK, 398A0739 | | 275 | 52.578 | -13.500 | 43.172 |
| ANSELL JONES TURNTABLE TRUCK, 398A0740 | | 275 | 52.578 | -13.500 | 43.172 |
| ANSELL JONES SNATCH BLOCKS | | 704 | 52.578 | -13.500 | 43.172 |
| ANSELL JONES SNATCH BLOCKS | | 636 | 52.578 | -13.500 | 43.172 |

EMERGENCY GEN'R ROOM: M3005
NO ADDITION

PAINT LOCKER : M0002
NO ADDITION

DECK LOCKER: M0006
NO ADDITION

COFFEE SHOP: M0007
NO ADDITION

CENTRAL CAISSON AREA (DRILL FL.): M0010
FLOOR PAINTING 132 56.388 0.000 42.672

EXTERIOR AREA:

WORKPACKS TO BE FABRICATED & INSTALLED IN BRAZIL:

| | | | | |
|---------------------|------|--------|---------|--------|
| 440300-136, rev.0 | 1034 | 72.398 | -21.254 | 54.522 |
| 440300-138, rev.0 | 1545 | 77.960 | -24.266 | 53.227 |
| 1440004-019, rev.3 | 40 | 57.837 | 22.265 | 38.776 |
| 1440004-022, rev.3 | 15 | 67.908 | -12.202 | 44.058 |
| 1440004-024, rev.4 | 38 | 53.451 | 16.988 | 41.213 |
| 1440011-001, rev.24 | 43 | 70.101 | 8.213 | 48.745 |
| 1440011-002, rev.17 | 58 | 69.800 | 18.997 | 48.627 |
| 1440011-003, rev.11 | 13 | 68.866 | 2.859 | 51.754 |
| 1440011-005, rev.9 | 10 | 92.516 | -10.648 | 55.196 |
| 1440011-006, rev.8 | 38 | 91.364 | -11.531 | 48.586 |

É CÓPIA FEL DO DOCUMENTO ORIGINAL
JOSE CARLOS PINHEIRO GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAS

**Solid Weight For Addition
Main Deck**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-----------------------------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
| 1440011-007, rev.6&7 | | 70 | 59.081 | 26.952 | 48.606 |
| 1440011-010, rev.12 & 13 | | 38 | 41.074 | 7.433 | 47.267 |
| 1440011-122, rev.2 | | 126 | 63.515 | 6.725 | 51.424 |
| 1440021-009, rev.2 | | 25 | 86.720 | -11.030 | 51.570 |
| 1440021-109, rev.7 | | 193 | 104.296 | 13.797 | 40.753 |
| 1440051-013, rev.0 | | 640 | 71.403 | 3.993 | 49.877 |
| 144051-110, rev.0 | | 68 | 30.968 | 15.400 | 50.557 |
| 1440051-112, rev.0 | | 136 | 106.270 | 2.689 | 49.882 |
| 1440051-122, rev.0 | | 238 | 77.409 | 6.138 | 48.059 |
| 1444330-001, rev.0 | | 2778 | 66.610 | 7.992 | 48.946 |
| 1440051-119, rev.0 | | 696 | 47.057 | 0.768 | 49.999 |
| 1450091, rev.6 | | 4 | 91.078 | 1.275 | 41.354 |
| 440300-147, rev.2 | | 111 | 60.365 | -12.382 | 30.500 |
| 440300-157, rev.0 | | 131 | 68.515 | 27.500 | 53.350 |
| 440300-164, rev.0 | | 146 | 51.910 | -10.050 | 53.215 |
| 1450091-165, rev.0 | | 26 | 63.325 | 9.950 | 52.750 |
| 440300-166, rev.0 | | 133 | 45.720 | -0.700 | 52.500 |
| 440300-168, rev.0 | | 27 | 67.910 | -2.200 | 38.300 |
| 440300-171, rev.0 | | 35 | 43.488 | 18.100 | 47.495 |
| 440300-172, rev.0 | | 25 | 57.985 | 4.450 | 38.450 |
| 440300-174, rev.0 | | 36 | 66.806 | 13.075 | 36.826 |
| 440300-176, rev.0 | | 320 | 97.940 | -5.459 | 38.576 |
| SAFETY EQUIPMENT BOXES | | 170 | 56.388 | 0.000 | 43.977 |
| EXTERIOR AREA: (ZONE M1) | | | | | |
| helideck net | | 400 | 24.000 | -32.000 | 48.000 |
| stairs | | 175 | 25.000 | -13.000 | 44.500 |
| hook | | 200 | 23.600 | 2.400 | 42.700 |
| palet lift | | 200 | 42.000 | -9.000 | 43.000 |
| box unidentified | | 150 | 39.500 | -2.200 | 43.300 |
| EXTERIOR AREA: (ZONE M2) | | | | | |
| platform | | 435 | 48.000 | 8.000 | 48.000 |
| ladder with gard | | 195 | 41.000 | 28.000 | 50.400 |
| railings | | 130 | 27.000 | 15.000 | 49.300 |
| valves | | 130 | 43.000 | 2.000 | 44.900 |
| box | | 91 | 35.700 | 4.800 | 43.200 |
| railings for anti fouling | | 141 | 32.000 | 13.500 | 47.100 |
| BOX NO.823 SEA TELEVISION ANTENNA | | 350 | 19.050 | 23.750 | 47.977 |
| BOX NO.822 SEA TEL EQUIPMENT | | 350 | 19.050 | 23.750 | 47.977 |
| BOX 824 SEA TELEVISION ANTENNA | | 460 | 19.050 | 23.750 | 47.977 |

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

**Solid Weight For Addition
Main Deck**

| Description | Compert.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|--|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| EXTERIOR AREA: (ZONE M3) | | | | | |
| pipe hanger | | 150 | 59.000 | -26.000 | 46.400 |
| pipe 2" | | 66 | 59.000 | -19.000 | 43.400 |
| pipe 90 | | 43 | 60.000 | -20.000 | 45.400 |
| pipe 48mm | | 26 | 60.000 | -20.000 | 45.400 |
| pipe 62mm | | 72 | 60.000 | -20.000 | 45.400 |
| pipe 48mm | | 82 | 60.000 | -20.000 | 45.400 |
| pipe 33mm | | 16 | 60.000 | -20.000 | 45.400 |
| EXTERIOR AREA: (ZONE M4) | | | | | |
| valves | | 180 | 53.000 | 18.000 | 45.000 |
| pipes 60mm | | 158 | 53.000 | 17.000 | 44.000 |
| pipe 90mm | | 41 | 51.000 | 32.000 | 42.700 |
| supprt | | 82 | 60.000 | 18.000 | 45.800 |
| supprt | | 80 | 49.000 | 24.000 | 48.000 |
| flexible | | 314 | 74.000 | 32.000 | 36.000 |
| EXTERIOR AREA: (ZONE M5) | | | | | |
| support | | 15 | 98.000 | -32.000 | 47.000 |
| pipes | | 15 | 104.000 | -30.000 | 46.000 |
| support | | 60 | 102.000 | -12.000 | 48.000 |
| pipes 2 1/2 | | 204 | 96.000 | -32.000 | 54.100 |
| pipes 2 | | 72 | 96.000 | -32.000 | 54.100 |
| pipe | | 60 | 80.000 | -20.000 | 54.100 |
| pipe | | 100 | 77.000 | -20.000 | 54.100 |
| pipe | | 120 | 74.000 | -20.000 | 54.100 |
| raillings | | 12 | 91.000 | -16.000 | 52.600 |
| step grating | | 50 | 73.000 | -16.000 | 42.800 |
| pipe 170mm | | 331 | 100.000 | -8.000 | 46.800 |
| pipe 170mm | | 242 | 100.000 | -8.000 | 46.800 |
| pipe 170mm | | 117 | 100.000 | -8.000 | 46.800 |
| pipe 170mm | | 135 | 100.000 | -8.000 | 46.800 |
| pipe 100mm | | 86 | 100.000 | -8.000 | 46.800 |
| pipe 100mm | | 81 | 100.000 | -8.000 | 46.800 |
| pipe 100mm | | 36 | 100.000 | -8.000 | 46.800 |
| pipe 100mm | | 28 | 100.000 | -8.000 | 46.800 |
| pipe 1 " | | 18 | 100.000 | -8.000 | 46.800 |
| pipe 2" | | 329 | 99.000 | -12.000 | 46.800 |
| raillings | | 15 | 96.000 | -9.000 | 46.800 |
| pipe 170mm | | 138 | 90.000 | -9.000 | 46.800 |
| blind and reducer | | 90 | 86.000 | 12.000 | 43.600 |
| ALLAN TANK INSULATION | | 1600 | 91.000 | 23.000 | 48.000 |
| EXTERIOR AREA: (ZONE M6) | | | | | |
| Nuovo pignone exhaust insulation TRAIN A | | 2900 | 88.713 | -5.700 | 55.400 |

**Solid Weight For Addition
Main Deck**

| Description | Compарт.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|---|--------------------|----------------|-------------------------|-------------------------|-------------------------|
| <i>Nuovo pignone exhaust insulation TRAIN B</i> | | 2900 | 88.713 | 9.300 | 55.400 |
| <i>Nuovo pignone exhaust insulation TRAIN C</i> | | 2900 | 88.713 | 12.300 | 55.400 |
| <i>Nuovo pignone exhaust insulation TRAIN A</i> | | 3201 | 88.713 | -5.700 | 55.400 |
| <i>Nuovo pignone exhaust insulation TRAIN B</i> | | 3201 | 88.713 | 9.300 | 55.400 |
| <i>Nuovo pignone exhaust insulation TRAIN C</i> | | 3201 | 88.713 | 12.300 | 55.400 |
| <i>Nuovo pignone turbine TRAIN A</i> | | 2365 | 98.000 | -5.700 | 46.300 |
| <i>Nuovo pignone turbine TRAIN B</i> | | 2365 | 98.000 | 9.300 | 46.300 |
| <i>Nuovo pignone turbine TRAIN C</i> | | 2365 | 98.000 | 12.300 | 46.300 |
| <i>Nuovo Pignone Turbine PIECES</i> | | 400 | 93.726 | -5.750 | 46.000 |
| <i>Nuovo Pignone Turbine PIECES</i> | | 400 | 93.726 | 9.250 | 46.000 |
| <i>Nuovo Pignone Turbine PIECES</i> | | 400 | 93.726 | 24.250 | 46.000 |
| <i>BOX NO.803 Nuovo Pignone TURBINES PIECES</i> | | 2090 | 94.488 | 9.250 | 46.300 |
| <i>BOX NO.804 Nuovo Pignone TURBINE PIECES</i> | | 1060 | 94.488 | 9.250 | 46.300 |
| <i>BOX NO.855 Nuovo Pignone Pieces</i> | | 20 | 93.726 | 9.250 | 46.000 |
| <i>BOX NO.856 Nuovo Pignone Pieces</i> | | 15 | 93.726 | 9.250 | 46.000 |
| <i>BOX NO.815 Nuovo Pignone Turbine Pieces</i> | | 520 | 94.488 | 9.250 | 46.300 |
| <i>BOX NO.817 Nuovo Pignone Turbine Pieces</i> | | 520 | 94.488 | 9.250 | 46.300 |
| <i>BOX NO.816 Nuovo Pignone Turbine Pieces</i> | | 520 | 94.488 | 9.250 | 46.300 |
| <i>Nuovo Pignone BOOST COMP. COUPLING</i> | | 143 | 84.582 | 9.250 | 46.300 |
| <i>Nuovo Pignone Container Content</i> | | 4109 | 82.000 | 20.000 | 48.000 |
| TRAIN A: | | | | | |
| <i>pipe 33mm</i> | | 20 | 77.000 | -8.000 | 44.900 |
| <i>pipe 60mm</i> | | 32 | 100.500 | -5.000 | 44.600 |
| <i>Tubing</i> | | 350 | 97.000 | -3.200 | 44.200 |
| <i>scrubber missing bolts and screw</i> | | 38 | 83.000 | 0.000 | 46.200 |
| <i>pipe 1 1/2 ced 40</i> | | 38 | 78.400 | 3.500 | 47.700 |
| <i>red pipe 75mm</i> | | 54 | 79.000 | 2.000 | 55.700 |
| <i>red pipe 45mm</i> | | 10 | 84.000 | 2.000 | 55.700 |
| <i>red pipe 90mm</i> | | 15 | 90.000 | -8.000 | 55.700 |
| <i>bulk tubing to be weighed</i> | | 324 | 77.000 | 3.500 | 47.000 |
| <i>ladder for weight shift</i> | | 126 | 104.000 | -9.000 | 46.300 |
| TRAIN B: | | | | | |
| <i>Cable trays</i> | | 36 | 98.000 | 6.000 | 45.900 |
| <i>cales trays</i> | | 18 | 90.000 | 9.200 | 45.200 |
| <i>pipe 33mm</i> | | 20 | 77.000 | 7.000 | 44.900 |
| <i>pipe 1 1/2 ced 40</i> | | 28 | 76.000 | 19.000 | 47.700 |
| <i>pipe 1 1/2 ced 40</i> | | 15 | 76.000 | 19.000 | 47.700 |
| <i>pipe 1 1/2 ced 40</i> | | 21 | 76.000 | 19.500 | 47.700 |
| <i>copper 1"</i> | | 22 | 81.000 | 19.500 | 47.700 |
| <i>copper 1 3/4"</i> | | 12 | 81.000 | 19.500 | 47.700 |
| <i>red pipe 90mm</i> | | 12 | 78.000 | 19.500 | 47.700 |
| <i>red pipe 75mm</i> | | 54 | 82.000 | 17.000 | 56.200 |
| <i>red pipe 45mm</i> | | 10 | 82.000 | 17.000 | 56.200 |
| <i>light support</i> | | 91 | 75.000 | 17.500 | 56.000 |

TRAIN C:

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO

19/03/2010 10:38-1320-974-NBD-946

DIVISÃO DE SERVIÇOS CARTOGRAFIA



**Solid Weight For Addition
Main Deck**

| Description | Compartment
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|------------------------|-----------------------|----------------|-------------------------|-------------------------|-------------------------|
| pipe 90 mm | | 28 | 87.000 | 22.500 | 43.800 |
| pipe 2 1/2 | | 52 | 84.000 | 23.000 | 44.500 |
| pipe 2 1/2 | | 52 | 85.000 | 22.500 | 43.700 |
| pipe 90 mm | | 105 | 85.000 | 22.500 | 43.700 |
| pipe 90 mm | | 44 | 85.000 | 22.500 | 43.700 |
| pipe 90 mm | | 32 | 85.000 | 22.500 | 43.700 |
| angle 5x3x1/4 | | 35 | 86.000 | 22.500 | 43.700 |
| pipe 33mm | | 27 | 77.000 | 22.500 | 44.700 |
| pipe 1 1/2 ced 40 | | 6 | 77.000 | 22.500 | 44.700 |
| box diffuser | | 800 | 84.000 | 30.000 | 49.000 |
| pipe 1 1/2 ced 40 | | 69 | 77.000 | 34.000 | 47.700 |
| pipe 33mm | | 35 | 77.000 | 34.000 | 47.700 |
| red pipe 75mm | | 54 | 79.000 | 32.000 | 55.800 |
| red pipe 45mm | | 10 | 79.000 | 32.000 | 55.800 |
| galvaniser | | 226 | 85.000 | 28.000 | 44.200 |
| supprt on container | | 82 | 96.000 | 32.000 | 46.400 |
| Total Main Deck | | 63944 | 79.207 | 3.772 | 49.239 |

É O ÚNICO DOCUMENTO ORIGINAL:
JOSE CARLOS PINHEIRO GUIMARÃES
DIRETOR
DIVISÃO DE SERVIÇOS CARTEIRAS



**Solid Weight For Addition
Upper Deck**

| Description | Compart.
Number | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|
|-------------|--------------------|----------------|-------------------------|-------------------------|-------------------------|

| | | | | | |
|--|-------|---|-------|-------|-------|
| EMERG. GEN'R CTL RM & FAN ROOM:
NO ADDITION | U3013 | 0 | 0.000 | 0.000 | 0.000 |
|--|-------|---|-------|-------|-------|

| | | | | | |
|-----------------------------------|-------|------|--------|--------|--------|
| CENTRAL CAISSON AREA (DRILL FL.): | U0001 | | | | |
| HATCH COVER DRILL FLOOR | | 2245 | 57.400 | -7.400 | 51.800 |
| PANNEL DRILLFLOOR | | 1800 | 57.400 | -8.700 | 59.700 |
| NIM 2t AIR WINCH, 398A0748 | | 455 | 53.000 | 4.000 | 52.800 |
| NIM 2t AIR WINCH, 398A0749 | | 455 | 53.000 | 4.000 | 52.800 |

EXTERIOR ZONES:

DERRICK:

| | | | | | |
|--|--|------|--------|---------|---------|
| FLOOR PAINTING | | 200 | 56.388 | 0.000 | 51.816 |
| HP FLARE (TA541201) | | 1360 | 54.600 | -1.800 | 119.435 |
| HP FLARE CON. SPOOL (B10F8013A) | | 612 | 55.500 | -2.500 | 116.700 |
| LP FLARE (TA541202) | | 816 | 58.400 | 2.100 | 119.710 |
| LP FLARE CON. SPOOL (B10F8506A) | | 970 | 58.000 | 0.300 | 116.700 |
| FLARE IGNITION | | 362 | 56.000 | 0.015 | 120.000 |
| FLARE BACKING STRUCTURE WP 1210027-15 | | 1208 | 56.400 | 0.000 | 115.900 |
| HANDRAIL | | | | | |
| FLARE HANDLING POST | | 1090 | 55.300 | 3.243 | 108.300 |
| FLARE HANDLING BOOM | | 720 | 55.300 | 3.243 | 112.300 |
| Low Pressure 12"ced 120 | | 569 | 68.500 | -10.500 | 57.400 |
| line 6" ced 40 low section | | 373 | 66.000 | -8.000 | 60.000 |
| line 6" ced 40 high section with support | | 631 | 56.900 | -2.000 | 109.500 |
| line 2 "ced40 low section with support | | 97 | 66.000 | -8.000 | 61.000 |
| line 2 "ced40 high section with support | | 109 | 58.000 | -2.000 | 109.500 |
| gas lines low section 1"ced 40 with support | | 503 | 64.000 | 5.000 | 60.500 |
| gas lines high section 1"ced 40 with support | | 335 | 59.000 | 0.000 | 109.500 |

| | | | | | |
|------------------|--|-------|--------|--------|--------|
| Total Upper Deck | | 14911 | 57.445 | -2.242 | 88.420 |
|------------------|--|-------|--------|--------|--------|

É Cópia Fiel do Documento Original

JOSE CARLOS PIMENTEL LUSIAC
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFIA



Solid Weight For ADDITION

Description: **ELECTRIC WIRE**

| TYPE | LOCATION | UNIT WEIGHT | | LENGHT
(m) | QTY | WEIGHT
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|----------|---------------|-------------|------|---------------|-------|----------------|-------------------------|-------------------------|-------------------------|
| | | (kg/m) | (kg) | | | | | | |
| 621F3001 | S6-007 S6-018 | 0 | | 35.000 | 1.000 | 7.2 | 78.000 | 4.000 | 42.000 |
| 621F3002 | M3003 M3003 | 0 | | 6.000 | 1.000 | 1.5 | 50.000 | -14.000 | 45.700 |
| 621F3002 | T1039 M3003 | 0 | | 91.000 | 1.000 | 22.8 | 48.000 | -13.000 | 45.000 |
| 621F3002 | S6030 T5001 | 0 | | 30.000 | 1.000 | 7.5 | 86.000 | 12.000 | 40.000 |
| 621F3002 | T6030 T6030 | 0 | | 22.000 | 1.000 | 5.5 | 83.000 | 20.000 | 39.000 |
| 621F3002 | M3003 M3003 | 0 | | 4.000 | 1.000 | 1.0 | 50.000 | -14.000 | 45.700 |
| 621F3002 | M3003 M3003 | 0 | | 4.000 | 1.000 | 1.0 | 50.000 | -14.000 | 45.700 |
| 621F3002 | U0 U0 | 0 | | 1000.000 | 1.000 | 250.0 | 68.000 | 0.000 | 55.000 |
| 621F3002 | M6 M6 | 0 | | 440.000 | 1.000 | 110.0 | 90.000 | 17.000 | 45.700 |
| 621F3002 | M3003 M3003 | 0 | | 21.000 | 1.000 | 5.3 | 50.000 | -14.000 | 45.700 |
| 621F3002 | COMPRESSOR C | 0 | | 160.000 | 1.000 | 40.0 | 85.000 | 25.000 | 55.000 |
| 621F3004 | T1039 T6030 | 0 | | 94.000 | 1.000 | 30.6 | 59.000 | 9.000 | 39.000 |
| 621F3004 | S5005 T5017 | 0 | | 47.000 | 1.000 | 15.3 | 81.000 | -12.000 | 40.500 |
| 621F3004 | M6 M6 | 0 | | 120.000 | 1.000 | 39.0 | 90.000 | 17.000 | 45.700 |
| 621F3004 | U0 U0 | 0 | | 280.000 | 1.000 | 91.0 | 68.000 | 0.000 | 55.000 |
| 621F3006 | C1002 M2 | 0 | | 40.000 | 1.000 | 17.8 | 22.000 | -5.000 | 41.000 |
| 621F3035 | M5053 M5053 | 2 | | 4.000 | 1.000 | 6.8 | 84.000 | -15.000 | 45.700 |
| 621F3035 | M5053 M6053 | 2 | | 75.000 | 1.000 | 128.3 | 84.000 | -9.000 | 45.700 |
| 621F3035 | M6 M6 | 2 | | 144.000 | 1.000 | 246.2 | 90.000 | 17.000 | 45.700 |
| 621F3035 | M6054 M4058 | 2 | | 83.000 | 1.000 | 141.9 | 69.000 | 19.000 | 45.700 |
| 621F3035 | M5051 M5051 | 2 | | 4.000 | 1.000 | 6.8 | 76.000 | -16.000 | 45.700 |
| 621F3035 | M5051 M0 | 2 | | 71.000 | 1.000 | 121.4 | 66.000 | -6.000 | 45.700 |
| 621F3035 | M0 M0 | 2 | | 4.000 | 1.000 | 6.8 | 68.000 | 0.000 | 45.700 |
| 621F3035 | M0 M2 | 2 | | 116.000 | 1.000 | 198.4 | 48.000 | 13.000 | 45.700 |

COPIA DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL DA SILVA
OPERATOR
DIVISAO DE MANUTENCAO

Solid Weight For ADDITION

Description: ELECTRIC WIRE

| TYPE | LOCATION | UNIT WEIGHT | | LENGHT | QTY | WEIGHT
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|----------|-------------|-------------|------|---------|-------|----------------|-------------------------|-------------------------|-------------------------|
| | | (kg/m) | (kg) | | | | | | |
| 621F3035 | T7121 T7121 | 2 | | 4.000 | 1.000 | 6.8 | 102.000 | -14.000 | 39.000 |
| 621F3035 | T0 T0 | 2 | | 4.000 | 1.000 | 6.8 | 68.000 | 0.000 | 39.000 |
| 621F3035 | T0 T4074 | 2 | | 54.000 | 1.000 | 92.3 | 54.000 | 7.000 | 39.000 |
| 621F3050 | T3035 M5053 | 2 | | 115.000 | 1.000 | 261.1 | 76.000 | -19.000 | 42.000 |
| 621F3095 | U3013 M1 | 4 | | 125.000 | 1.000 | 511.3 | 56.000 | -25.000 | 48.000 |
| 625D0012 | T2040 T0 | 0 | | 115.000 | 1.000 | 32.2 | 42.000 | 4.000 | 39.000 |
| 626H0191 | U0 U0 | 0 | | 75.000 | 1.000 | 13.5 | 68.000 | 0.000 | 55.000 |
| 626H0191 | T2040 T2040 | 0 | | 15.000 | 1.000 | 2.7 | 30.000 | 8.000 | 39.000 |
| 626H0201 | M6003 M6003 | 0 | | 70.000 | 1.000 | 21.0 | 88.000 | 24.000 | 45.700 |
| 626H0201 | U0 U0 | 0 | | 140.000 | 1.000 | 42.0 | 68.000 | 0.000 | 55.000 |
| 626H0201 | U6 U6 | 0 | | 70.000 | 1.000 | 21.0 | 86.000 | 12.000 | 55.000 |
| 626H0201 | M6002 M6002 | 0 | | 35.000 | 1.000 | 10.5 | 80.000 | 28.000 | 45.700 |
| 626H0201 | M6002 U6 | 0 | | 35.000 | 1.000 | 10.5 | 80.000 | 28.000 | 51.000 |
| 626H0201 | U0 U0 | 0 | | 140.000 | 1.000 | 42.0 | 68.000 | 0.000 | 55.000 |
| 626H0201 | U6 M6002 | 0 | | 35.000 | 1.000 | 10.5 | 80.000 | 28.000 | 51.000 |
| 626H0201 | M6002 U6 | 0 | | 35.000 | 1.000 | 10.5 | 80.000 | 28.000 | 51.000 |
| 626H0201 | U6 U6 | 0 | | 35.000 | 1.000 | 10.5 | 86.000 | 12.000 | 55.000 |
| 626H0201 | M6003 M6003 | 0 | | 35.000 | 1.000 | 10.5 | 88.000 | 24.000 | 45.700 |
| 626H0201 | M6 M6002 | 0 | | 35.000 | 1.000 | 31.5 | 40.000 | 26.000 | 45.700 |
| 626H0201 | U2 | 0 | | 105.000 | 1.000 | 115.7 | 82.000 | 16.000 | 42.000 |
| 626H0202 | S6022 S6004 | 1 | | 178.000 | 1.000 | 3.4 | 50.000 | -14.000 | 45.700 |
| 626J0304 | M3003 M3003 | 0 | | 8.000 | 1.000 | 189.2 | 68.000 | 0.000 | 55.000 |
| 626J0304 | U0 U0 | 0 | | 440.000 | 1.000 | 137.6 | 86.000 | 17.000 | 45.700 |
| 626J0304 | M6 M6 | 0 | | 320.000 | 1.000 | | | | |

COPIA DO DOCUMENTO ORIGINAL



Solid Weight For ADDITION

Description: **ELECTRIC WIRE**

| TYPE | LOCATION | UNIT WEIGHT | | LENGHT
(m) | QTY | WEIGHT
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|--------------|----------|-------------|------|---------------|-------|----------------|-------------------------|-------------------------|-------------------------|
| | | (kg/m) | (kg) | | | | | | |
| 626K0301 | S6022 M6 | 0 | | 35.000 | 1.000 | 16.1 | 80.000 | 15.000 | 43.500 |
| 626L0101 | M0 M0 | 0 | | 105.000 | 1.000 | 22.1 | 68.000 | 0.000 | 45.700 |
| 626L0101 | U0 U0 | 0 | | 105.000 | 1.000 | 22.1 | 68.000 | 0.000 | 55.000 |
| 626L0101 | M6 M6 | 0 | | 210.000 | 1.000 | 44.1 | 86.000 | 17.000 | 45.700 |
| E3X1 | U0 U0 | 0 | | 70.000 | 1.000 | 14.4 | 68.000 | 0.000 | 55.000 |
| E7X1 | U0 U0 | 0 | | 35.000 | 1.000 | 13.0 | 68.000 | 0.000 | 55.000 |
| TOTAL | | | | | | 3237.3 | 69.923 | 0.689 | 47.471 |

CÓPIA FIEL DO DOCUMENTO ORIGINAL
JOSE CARLOS PIKENIEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Liquid Weight For Deduction
Sea Water Ballast Tanks

| Description | Sounding
(cm) | %
Full | Volume
(m3) | S.G. | Weight
(t.) | LCG
from Fr.0
(m) | TCG
(m) | VCG
(m) | FSC
Transv.
(m4) | FSC
Long.
(m4) |
|-------------------|------------------|-----------|----------------|-------|----------------|-------------------------|------------|------------|------------------------|----------------------|
| SW Ballast No.1P | FULL | 100.00 | 886.7 | 1.026 | 909.3 | 9.50 | -24.47 | 6.78 | 0.0 | 0.0 |
| SW Ballast No.1S | 1157.9 | 94.55 | 838.4 | 1.026 | 859.7 | 9.37 | 24.48 | 6.48 | 425.6 | 3432.3 |
| SW Ballast No.2P | FULL | 100.00 | 877.6 | 1.026 | 899.9 | 6.78 | -30.71 | 6.22 | 0.0 | 0.0 |
| SW Ballast No.2S | 1190.9 | 99.01 | 868.9 | 1.026 | 891.0 | 6.78 | 30.71 | 6.16 | 280.1 | 718.7 |
| SW Ballast No.3P | FULL | 100.00 | 728.7 | 1.026 | 747.3 | 16.71 | -30.88 | 6.16 | 0.0 | 0.0 |
| SW Ballast No.3S | FULL | 100.00 | 728.7 | 1.026 | 747.3 | 16.71 | 30.88 | 6.16 | 0.0 | 0.0 |
| SW Ballast No.4P | FULL | 100.00 | 798.3 | 1.026 | 818.6 | 13.73 | -36.37 | 6.21 | 0.0 | 0.0 |
| SW Ballast No.4S | FULL | 100.00 | 798.3 | 1.026 | 818.6 | 13.73 | 36.37 | 6.21 | 0.0 | 0.0 |
| SW Ballast No.5P | FULL | 100.00 | 256.6 | 1.026 | 263.1 | 27.71 | -22.82 | 2.99 | 0.0 | 0.0 |
| SW Ballast No.5S | 877.6 | 98.05 | 251.6 | 1.026 | 258.0 | 27.72 | 22.85 | 2.87 | 3.4 | 194.7 |
| SW Ballast No.6P | FULL | 100.00 | 523.9 | 1.026 | 537.3 | 28.19 | -31.74 | 5.28 | 0.0 | 0.0 |
| SW Ballast No.6S | FULL | 100.00 | 523.9 | 1.026 | 537.3 | 28.19 | 31.74 | 5.28 | 0.0 | 0.0 |
| SW Ballast No.7P | FULL | 100.00 | 555.2 | 1.026 | 569.3 | 26.94 | -36.18 | 6.12 | 0.0 | 0.0 |
| SW Ballast No.7S | 1183.9 | 98.51 | 546.9 | 1.026 | 560.9 | 26.94 | 36.18 | 6.03 | 66.9 | 581.5 |
| SW Ballast No.11P | FULL | 100.00 | 644.7 | 1.026 | 661.1 | 51.05 | -30.81 | 4.57 | 0.0 | 0.0 |
| SW Ballast No.11S | FULL | 100.00 | 644.7 | 1.026 | 661.1 | 51.05 | 30.81 | 4.57 | 0.0 | 0.0 |
| SW Ballast No.13P | FULL | 100.00 | 644.7 | 1.026 | 661.1 | 61.72 | -30.81 | 4.57 | 0.0 | 0.0 |
| SW Ballast No.13S | FULL | 100.00 | 644.7 | 1.026 | 661.1 | 61.72 | 30.81 | 4.57 | 0.0 | 0.0 |
| SW Ballast No.16P | 7.5 | 3.60 | 9.0 | 1.026 | 9.2 | 62.91 | -24.30 | 0.06 | 66.3 | 286.7 |
| SW Ballast No.16S | 550.9 | 77.85 | 194.4 | 1.026 | 199.3 | 85.05 | 23.11 | 1.79 | 3.4 | 194.7 |
| SW Ballast No.17P | 680.9 | 62.59 | 327.9 | 1.026 | 336.3 | 84.59 | -31.56 | 2.75 | 150.1 | 935.0 |
| SW Ballast No.17S | FULL | 100.00 | 523.9 | 1.026 | 537.3 | 84.59 | 31.74 | 5.28 | 0.0 | 0.0 |
| SW Ballast No.18P | 1193.1 | 99.29 | 551.2 | 1.026 | 565.3 | 85.84 | -36.18 | 6.07 | 66.9 | 581.6 |

CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS FILGUEIRA GUSMÃO

Liquid Weight For Deduction
Sea Water Ballast Tanks

| Description | Sounding
(cm) | %
Full | Volume
(m3) | S.G. | Weight
(t.) | LCG
from Fr.0
(m) | TCG
(m) | VCG
(m) | FSC
Transv.
(m4) | FSC
Long.
(m4) |
|----------------------|------------------|-----------|----------------|-------|----------------|-------------------------|-------------|---------------|------------------------|----------------------|
| SW Ballast No.18S | FULL | 100.00 | 555.2 | 1.026 | 569.3 | 85.84 | 36.18 | 6.12 | 0.0 | 0.0 |
| SW Ballast No.19P | 1007.2 | 83.59 | 609.1 | 1.026 | 624.7 | 96.08 | -30.88 | 5.17 | 245.8 | 437.0 |
| SW Ballast No.19S | FULL | 100.00 | 728.7 | 1.026 | 747.3 | 96.07 | 30.88 | 6.16 | 0.0 | 0.0 |
| SW Ballast No.20P | 1186.6 | 98.71 | 758.3 | 1.026 | 777.6 | 98.68 | -36.45 | 6.09 | 106.6 | 1179.1 |
| SW Ballast No.20S | FULL | 100.00 | 768.2 | 1.026 | 787.8 | 98.68 | 36.45 | 6.17 | 0.0 | 0.0 |
| SW Ballast No.21P | FULL | 100.00 | 963.7 | 1.026 | 988.2 | 103.87 | -24.48 | 6.69 | 0.0 | 0.0 |
| SW Ballast No.21S | FULL | 100.00 | 963.7 | 1.026 | 988.2 | 103.87 | 24.48 | 6.69 | 0.0 | 0.0 |
| SW Ballast No.22P | 5.4 | 1.64 | 17.5 | 1.026 | 17.9 | 78.48 | -30.81 | 0.11 | 158.8 | 422.1 |
| SW Ballast No.22S | 0.0 | 0.00 | 0.0 | 1.026 | 0.0 | 56.39 | 30.81 | 0.00 | 0.0 | 0.0 |
| SW Ballast No.23P | 0.0 | 0.00 | 0.0 | 1.026 | 0.0 | 56.39 | -27.55 | 12.19 | 0.0 | 0.0 |
| SW Ballast No.23S | 24.0 | 3.26 | 21.7 | 1.026 | 22.3 | 42.29 | 27.55 | 12.32 | 941.9 | 979.3 |
| SW Ballast No.24P | 0.0 | 0.00 | 0.0 | 1.026 | 0.0 | 56.39 | 0.00 | 9.14 | 0.0 | 0.0 |
| SW Ballast No.24S | 0.0 | 0.00 | 0.0 | 1.026 | 0.0 | 56.39 | 0.00 | 9.14 | 0.0 | 0.0 |
| SW Ballast No.25P | 0.0 | 0.00 | 0.0 | 1.026 | 0.0 | 56.39 | 0.00 | 12.19 | 0.0 | 0.0 |
| SW Ballast No.25S | 0.0 | 0.00 | 0.0 | 1.026 | 0.0 | 56.39 | 0.00 | 12.19 | 0.0 | 0.0 |
| SW Ballast No.26P | 3.8 | 1.13 | 11.1 | 1.026 | 11.4 | 61.38 | -26.33 | 9.19 | 292.2 | 325.0 |
| SW Ballast No.26S | 10.0 | 2.47 | 24.2 | 1.026 | 24.8 | 67.27 | 26.33 | 9.24 | 636.9 | 708.3 |
| Total Ballast | | | 19269.2 | | 51.15 | 0.71 | 5.74 | 3444.6 | 10976.1 | |

CÓPIA DO DOCUMENTO ORIGINAL

JOSE CARLOS PINHEIRO
DIRETOR
DE SERVIÇOS GERAIS

Liquid Weight For Deduction
Oil Storage

| Description | Sounding
(cm) | %
Full | Volume
(m3) | S.G. | Weight
(t.) | LCG
(m) | TCG
(m) | VCG
(m) | FSC
Transv.
(m4) | FSC
Long.
(m4) |
|-----------------------|------------------|-----------|----------------|-------|----------------|------------|------------|------------|------------------------|----------------------|
| Drains Stor. Tk No.1P | 0.0 | 0.00 | | | 0.0 | | | | | |
| Drains Stor. Tk No.1S | 0.0 | 0.00 | | | 0.0 | | | | | |
| Fwd Column P-Tk A | 0.0 | 0.00 | | | 0.0 | | | | | |
| Fwd Column P-Tk B | 0.0 | 0.00 | | | 0.0 | | | | | |
| Fwd Column P-Tk C | 0.0 | 0.00 | | | 0.0 | | | | | |
| Fwd Column P-Tk D | 0.0 | 0.00 | | | 0.0 | | | | | |
| F.O. Tank No.10P | 0.0 | 0.00 | | | 0.0 | | | | | |
| F.O. Tank No.10S | 0.0 | 0.00 | | | 0.0 | | | | | |
| F.O. Tank No.12P | 0.0 | 0.00 | | | 0.0 | | | | | |
| F.O. Tank No.12S | 0.0 | 0.00 | | | 0.0 | | | | | |
| D.O. Settling No.1 | 275.7 | 49.17 | 59.6 | 0.865 | 51.6 | 74.524 | -13.907 | 37.976 | 21.5 | 74.9 |
| D.O. Day Tk No.2 | 471.0 | 84.36 | 107.3 | 0.865 | 92.8 | 74.598 | -17.446 | 38.937 | 26.3 | 75.9 |
| D.O. Day Tk No.3 | 255.7 | 84.37 | 71.3 | 0.865 | 61.7 | 82.010 | 15.621 | 37.876 | 231.4 | 19.3 |
| D.O. Settling No.4 | 136.0 | 48.75 | 41.2 | 0.865 | 35.6 | 79.152 | 15.621 | 37.276 | 231.4 | 19.3 |
| F.O. Overflow P | 0.0 | 0.00 | | | 0.0 | | | | | |
| D.O. Service | 220.0 | 88.37 | 11.4 | 0.865 | 9.8 | 48.006 | -21.146 | 46.868 | 0.6 | 9.1 |
| D.O. Sludge P | 13.6 | 8.90 | 0.4 | 0.865 | 0.3 | 67.607 | -15.620 | 35.102 | 1.4 | 0.3 |
| D.O. Sludge S | 7.5 | 4.93 | 0.1 | 0.865 | 0.1 | 78.581 | 10.097 | 35.102 | 0.2 | 0.5 |
| Helifuel Tk No.1P | 0.0 | 0.00 | | | 0.0 | | | | | |
| Helifuel Tk No.1S | 0.0 | 0.00 | | | 0.0 | | | | | |
| Separator Tk No.1P | 39.3 | 26.09 | 3.6 | 0.900 | 3.2 | 79.724 | -26.289 | 35.202 | 4.0 | 12.2 |
| Separator Tk No.1S | 8.3 | 5.80 | 0.8 | 0.900 | 0.7 | 79.724 | 26.289 | 35.102 | 4.0 | 12.2 |
| Waste Oil No.1P | 3.5 | 2.29 | 0.4 | 0.900 | 0.4 | 80.721 | -24.555 | 21.586 | 0.3 | 1.0 |

FICOPARCEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTA DE OLIVEIRA
SUPERVISOR

Liquid Weight For Deduction
Oil Storage

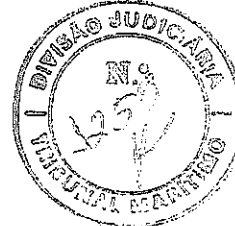
| Description | Sounding
(cm) | %
Full | Volume
(m3) | S.G. | Weight
(t.) | LCG
(m) | TCG
(m) | VCG
(m) | FSC
Transv.
(m4) | FSC
Long.
(m4) |
|------------------------------|------------------|-----------|----------------|-------|----------------|---------------|---------------|---------------|------------------------|----------------------|
| Waste Oil No.1S | 5.5 | 0.72 | 0.1 | 0.900 | 0.1 | 80.721 | 24.555 | 24.086 | 0.3 | 1.0 |
| Incinerator D.O. Day Tk | | | 0.1 | 0.870 | 0.1 | 21.660 | 26.760 | 43.940 | 0.2 | 0.2 |
| LO Air Compressor Tk | 0.0 | 0.00 | | | 0.0 | | | | | |
| LO Gas Turb | 0.0 | 0.00 | | | 0.0 | | | | | |
| Moor Windlass St. A | 0.0 | 0.00 | 0.0 | | 0.0 | | | | | |
| Moor Windlass St. B | 0.0 | 0.00 | 0.2 | | 0.0 | | | | | |
| Moor Windlass St. C | 0.0 | 0.00 | 0.0 | | 0.0 | | | | | |
| Moor Windlass St. D | 0.0 | 0.00 | 0.0 | | 0.0 | | | | | |
| Emerg. Gen. L.O. Storage | N/A | 85.83 | 0.5 | 0.515 | 0.2 | 48.600 | -22.170 | 45.000 | 0.0 | 0.0 |
| LO Storage P | N/A | 0.00 | 0.0 | 0.900 | 0.0 | 35.870 | -22.200 | 3.430 | 0.0 | 0.0 |
| LO Storage S | N/A | 0.00 | 0.0 | 0.900 | 0.0 | 35.870 | 22.200 | 3.430 | 0.0 | 0.0 |
| Bilge Holding Tk Port | 42.0 | 60.36 | 1.4 | 0.900 | 1.3 | 78.486 | -26.289 | 0.200 | 1.5 | 0.7 |
| Bilge Holding Tk Stbd | 55.0 | 35.97 | 1.9 | 0.900 | 1.7 | 78.486 | -26.289 | 0.250 | 1.5 | 0.7 |
| Start-Up Generator Fuel Tank | N/A | 75.00 | 1.7 | 0.870 | 1.5 | 52.588 | -24.568 | 52.816 | 0.8 | 0.1 |
| | 0.0 | 0.00 | | | 0.0 | | | | | |
| | 0.0 | 0.00 | | | 0.0 | | | | | |
| | 0.0 | 0.00 | | | 0.0 | | | | | |
| | 0.0 | 0.00 | | | 0.0 | | | | | |
| Total Oil Storage | | | | | 261.2 | 75.912 | -4.668 | 38.113 | 525.4 | 227.2 |

CÓPIA DO DOCUMENTO ORIGINAL
JOSE CARLOS PIMENTE GUSMÃO
DIRETOR
DEPARTAMENTO DE SERVIÇOS CANTOPIAS

Liquid Weight For Deduction
Potable Water, Drill Water, Miscellaneous

| Description | Sounding
(cm) | %
Full | Volume
(m3) | S.G. | Weight
(t.) | LCG
(m) | TCG
(m) | VCG
(m) | FSC
Transv.
(m4) | FSC
Long.
(m4) |
|--|------------------|-----------|----------------|-------|----------------|--------------|-------------|--------------|------------------------|----------------------|
| Potable Water Tk No.1P | 442.3 | 75.2 | 145.8 | 1.000 | 145.8 | 84.582 | -29.989 | 25.11 | 62.9 | 286.6 |
| Potable Water Tk No.1S | 456.5 | 77.5 | 150.3 | 1.000 | 150.3 | 84.582 | 29.989 | 25.11 | 62.9 | 286.5 |
| Potable Water Day Tk | N/A | 99 | 15.1 | 1.000 | 15.1 | 78.867 | 4.981 | 38.1 | 2.11 | 2.22 |
| Drill Water No.8P | 0 | | | | 0.0 | | | | | |
| Drill Water No.8S | 0 | | | | 0.0 | | | | | |
| Drill Water No.9P | 0 | | | | 0.0 | | | | | |
| Drill Water No.9S | 0 | | | | 0.0 | | | | | |
| Drill Water No.14P | 0 | | | | 0.0 | | | | | |
| Drill Water No.14S | 0 | | | | 0.0 | | | | | |
| Drill Water No.15P | 0 | | | | 0.0 | | | | | |
| Drill Water No.15S | 0 | | | | 0.0 | | | | | |
| Total Potable Water, Drill Water, Miscellaneous | | | 311.2 | | 311.2 | 84.31 | 0.67 | 25.74 | 127.8 | 575.3 |

Cópia fiel do documento original
 JOSE CARLOS PIMENTEL DA SILVA
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS





Liquid Weight For Deduction
Liquid In Packages

| No. | Description | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-----------|---------------------------------|----------------|-------------------------|-------------------------|-------------------------|
| UQ-122308 | Lub Oil Console Train C | 0 | 89.670 | 24.550 | 49.230 |
| UQ-122306 | Lub Oil Console Train B | 0 | 89.680 | 9.550 | 49.240 |
| UQ-122304 | Lub Oil Console Train A (20 m3) | 16200 | 89.710 | -5.450 | 49.250 |

| | | | | |
|--------------------------|-------|--------|--------|--------|
| Total Liquid In Packages | 16200 | 89.710 | -5.450 | 49.250 |
|--------------------------|-------|--------|--------|--------|

CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PUENTE DE OLIVEIRA
DIRETOR
DIVISÃO DE SERVIÇOS CARTORIAIS

Liquid Weight For Addition

| No. | Description | Weight
(kg) | LCG
from Fr.0
(m) | TCG
from C.L.
(m) | VCG
from B.L.
(m) |
|-----|-------------|----------------|-------------------------|-------------------------|-------------------------|
|-----|-------------|----------------|-------------------------|-------------------------|-------------------------|

Liquid In Systems:

| | | | | |
|----------------------------|------|--------|--------|--------|
| Fuel Oil System | 1682 | 67.373 | -0.683 | 11.070 |
| Diesel Oil Added in Brazil | 79 | 74.101 | 3.905 | 40.421 |

Liquid In Packages:

| | | | | | |
|-------------|--|-------|---------|---------|--------|
| UQ-122308 | Compressor Unit & Turbine Driver-Train "C" | 4735 | 88.206 | 26.395 | 48.774 |
| UQ-122306 | Compressor Unit & Turbine Driver-Train "B" | 4735 | 88.206 | 11.395 | 48.774 |
| UQ-122304 | Compressor Unit & Turbine Driver-Train "A" | 4735 | 88.206 | -3.607 | 48.774 |
| UQ-122309 | Compression Process Package "C" | 1680 | 75.690 | 33.530 | 57.020 |
| UQ-122307 | Compression Process Package "B" | 1680 | 75.690 | 18.290 | 57.020 |
| UQ-122305 | Compression Process Package "A" | 1680 | 75.690 | 3.290 | 57.020 |
| A-3005 | Gas Booster Compression Unit | 0 | 64.569 | 16.140 | 44.410 |
| UQ-121003 | Hydraulic Power Package | 19500 | 65.870 | 7.060 | 35.480 |
| A31010 | Export Compressor Seal Console | 2000 | 72.420 | 21.940 | 43.670 |
| UQ-122314 | Fuel Gas/Gas Export Pig Launchers Packages | 800 | 47.950 | -1.540 | 52.760 |
| UQ-511101 | Seawater Pumps Oil Circulating Units | 420 | 56.390 | -1.250 | 37.350 |
| B-533606A/B | Production Caisson Skim Oil Pump | 500 | 64.750 | -12.950 | 30.250 |
| UQ-121001 | Well Control Panels | 2300 | 65.870 | 7.060 | 35.480 |
| UQ-122310 | Gas Comp. Starter Skid | 300 | 101.040 | 16.750 | 44.280 |
| Z-TA-541201 | LPG Skid | 1000 | 60.520 | 9.470 | 52.410 |
| YA/997A | Waste Heat Recovery Unit | 1350 | 72.880 | -31.300 | 51.810 |
| YA/997B | Waste Heat Recovery Unit | 1350 | 39.880 | 31.300 | 51.810 |

| | | | | |
|---|--------------|---------------|--------------|---------------|
| Total Liquid Weight For Addition | 50527 | 72.673 | 9.058 | 42.383 |
|---|--------------|---------------|--------------|---------------|

É Cópia Fiel do Documento Original

JOSÉ CARLOS PINHEIRO GUSMÃO
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTORIAIS



Shell Canada Products Limited
Produits Shell Canada Limitée

RECEIPT FOR MARINE BUNKER FUELS
RÉCÉPISSÉ DE MAZOUT LOURD - NAVIRE

NAME OF PORT / NOM DU PORT: Quebec
EX DEPOT / FRANCO AU DÉPÔT:
PORT NUMBER / N° DU PORT:
NAME OF CUSTOMER / CLIENT: Merritt Allard
CUSTOMER NUMBER / N° DU CLIENT:
NAME OF VESSEL / NAVIRE: PETROBRAS P36
NUMBER OF RECEIPTS / RAISED FOR THIS VESSEL:
NOMBRE DE RÉCÉPISSÉS / ÉTABLIS POUR CE NAVIRE:

RECEIPT NUMBER / N° DE RÉCÉPISSÉ:
DELIVERY DATE / DATE DE LIVRAISON: 09.10.99
(Day) (Mth) (Year)
(Jour) (Mois) (Année)

METHOD OF DELIVERY / MODE DE LIVRAISON: GH Line
Quai/Lighter/Lorry/Rail/Drums
Quai/transbordeur/camion/chemin de fer/fûts

QUANTITY AT 15° C / QUANTITÉ À 15° C:
Litres/US Gals/Imp Gals/Long Tons
Litres/gal américain/gal imp./tonnes fortes

U.S. Barrels
Barils américains

GRADE DELIVERED / QUALITÉ LIVRÉE: Marine Fuel Oil Mazout-Navire (del visc. (visc. liv. (cSt) (cSt))

Marine Diesel Fuel Carburant diesel-Navire

Light Marine Diesel Fuel Carburant diesel-Navire léger

Gas Oil Gazole

Thin Fuel Oil Carburant dilué

GRADE ORDERED / QUALITÉ COMMANDÉE: (if different) (si différente)

Thin Fuel Oil Carburant dilué

Delivered Temperature / Temp. à la livraison: 17 °C
Delivered S.G. / Densité à la livraison: °C
Specific Gravity at 15° C / Densité à 15° C: 867
Flashpoint / Point d'éclair: °C
Water / Eau: %

ALL VISCOSITY FIGURES STATED ABOVE ARE QUOTED IN KINEMATIC CENTISTOKES (cSt) at 50° C
LES CHIFFRES CI-CONTRE SE RAPPORTENT À LA VISCOSITÉ CINÉMATIQUE EN CENTISTOKES (cSt) à 50° C

RECEIVED FOR USE AS BUNKERS, TOGETHER WITH REPRESENTATIVE SAMPLE (Also overtime, where incurred, as detailed under 'Additional Charges' below)
ACCUSÉ DE RÉCEPTION DE PRODUITS - SERVICE MAZOUTS LOURDS ET D'ÉCHANTILLON TYPE (Y compris frais de surtemps occasionnés et détaillés plus bas sous frais additionnels)

Signed by / Signature du REPRESENTATIVE / REPRÉSENTANT DU PROPRIÉTAIRE / SHELL REPRESENTATIVE / REPRÉSENTANT DE SHELL: GH Line

SIGNATORY'S NAME / NOM DU SIGNATAIRE: H.R. DUNN
EN LETTRES MOULÉES
REMARKS / OBSERVATIONS:

NUMBER OF ADDITIONAL CHARGES / LOCAL PRICES / ADDITIONAL COMMENTS / FRAIS ADDITIONNELS / PRIX SUR PLACE / OBSERVATIONS COMPLÉMENTAIRES:

(enter full details below) / (préciser ci-dessous)

Type of Additional Charge / Local Price / Comments / Nature des frais additionnels / Prix sur place / Observations

Rate of Charge (including currency or %) / Taux des frais (taux du change ou % inclus)

Per Par (unit of quantity) / (unité de mesure)

Or Total Charge / Ou Montant total

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTA GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTÁRIOS



Shell Canada Products Limited
Produits Shell Canada Limitée

RECEIPT FOR MARINE BUNKER FUELS
RÉCÉPISSÉ DE MAZOUT LOURD - NAVIRE

NAME OF PORT Quebec EX DEPOT FRANCO AU DÉPÔT mtl PORT NUMBER
NOM DU PORT Quebec FRANCO AU DÉPÔT mtl N° DU PORT

NAME OF CUSTOMER M. R. L. Allard CUSTOMER NUMBER
CLIENT M. R. L. Allard N° DU CLIENT

NAME OF VESSEL Columbus
NAVIRE Columbus

NUMBER OF RECEIPTS
RAISED FOR THIS VESSEL
NOMBRE DE RÉCÉPISSÉS
ÉTABLIS POUR CE NAVIRE

RECEIPT NUMBER 424-798-799 METHOD OF DELIVERY Convoiage G.H.L. inc. Laval
N° DE RÉCÉPISSÉ 424-798-799 MODE DE LIVRAISON Convoiage G.H.L. inc. Laval
DELIVERY DATE 2-1-10-1999 QUANTITY AT 15° C 15° C
DATE DE LIVRAISON 2-1-10-1999 QUANTITÉ À 15° C 15° C

Litres/US Gals/Imp Gals/Long Tons 159.800
Litres/gal amér./gal imp./tonnes fortes 159.800

GRADE DELIVERED Marine Fuel Oil Marine Diesel Fuel Light Marine Diesel Fuel Gas Oil Thin Fuel Oil
QUALITÉ Marine Fuel Oil Marine Diesel Fuel Light Marine Diesel Fuel Gas Oil Thin Fuel Oil
LIVRÉE Marine Fuel Oil Marine Diesel Fuel Light Marine Diesel Fuel Gas Oil Thin Fuel Oil

Delivered Temperature 12.4 °C
Temp. à la livraison 12.4 °C
Delivered S.G. 0.867 at 15 °C
Densité à la livraison 0.867 à 15 °C
Specific Gravity at 15°C
Densité à 15°C
Flashpoint 20 °C
Point d'éclair 20 °C

ALL VISCOSITY FIGURES STATED ABOVE ARE QUOTED IN KINEMATIC CENTISTOKES (cSt) at 50° C
LES CHIFFRES CI-CONTRE SE RAPPORTENT À LA VISCOSITÉ CINÉMATIQUE EN CENTISTOKES (cSt) à 50° C

RECEIVED FOR USE AS BUNKERS, TOGETHER WITH REPRESENTATIVE SAMPLE (Also overtime, where incurred, as detailed under "Additional Charges" below)

ACCUSÉ DE RÉCEPTION DE PRODUITS - SERVICE MAZOUTS LOURDS ET D'ÉCHANTILLON TYPE (Y compris frais de surtemps occasionnés et détaillés plus bas sous additionnels)

Signed by [Signature] SIGNATORY'S NAME [Signature]
OWNER'S REPRESENTATIVE [Signature] IN BLOCK LETTERS [Signature]
NOM DU SIGNATAIRE [Signature]
EN LETTRES MOULÉES [Signature]
REMARKS [Signature]
OBSERVATIONS [Signature]

NUMBER OF ADDITIONAL CHARGES/LOCAL PRICES/ADDITIONAL COMMENTS (enter full details below)
FRAIS ADDITIONNELS/PRIX SUR PLACE/OBSERVATIONS COMPLÉMENTAIRES (préciser ci-dessous)

| Type of Additional Charge/
Local Price/Comments
Nature des frais additionnels/Prix
sur place/Observations | Rate of Charge
(including currency or %)
Taux des frais
(taux du change ou % inclus) | Per
Par
(unit of quantity)
(unité de mesure) | Or Total Charge
Ou Montant total |
|--|---|---|-------------------------------------|
| 1. | | | |
| 2. | | | |
| 3. | | | |

ÉCOPIA FIEL DO DOCUMENTO ORIGINAL
JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DEPARTAMENTO DE SERVIÇOS CANTARIAS

TEST - DATE DE L'ÉTALONNAGE/Calibration Date: August 20, 1999

EMPLACEMENT/Location: Davie Industries Inc., Lévis (Québec)

Plate Shop - Low Bay

IDENTIFICATION DE LA BALANCE/Scale Identification

MARQUE/Mark: Console: Masstron M5000 - Scale Frame: Cranemate 25 tons

TYPE: Strain Gauge

NUMÉRO/Number: P-1311 (Davie), 5105 (Calibration Certificate)

PRÉCISION/Precision: 0.0008 %

Page 1 of 2

| Nº POIDS/
Weight No. | DIMENSION | COMPOSITION
(A) ACIER/Steel
(B) BÉTON/Concrete | MASSE/Mass
(kg) | REMARQUES/Remarks |
|-------------------------|--------------|--|--------------------|-------------------|
| A | 5' x 5' x 5' | B | 8795 | |
| B | 5' x 5' x 5' | B | 8666 | |
| C | 5' x 5' x 5' | B | 8187 | |
| D | 5' x 5' x 5' | B | 8267 | |
| E | 5' x 5' x 5' | B | 8128 | |
| F | 5' x 5' x 5' | B | 7974 | |
| G | 5' x 5' x 5' | B | 8160 | |
| H | 5' x 5' x 5' | B | 7888 | |
| I | 5' x 5' x 5' | B | 8147 | |
| J | 5' x 5' x 5' | B | 8292 | |
| K | 5' x 5' x 5' | B | 7902 | |
| L | 5' x 5' x 5' | B | 8051 | |
| M | 5' x 5' x 5' | B | 7834 | |

TÉMOINS/Witnesses

| NOM/Name | COMPAGNIE/Company | SIGNATURE | DATE |
|--------------|-------------------|----------------------|----------|
| M. Evans | Noble Denton | <i>Mark S. Evans</i> | 23-08-99 |
| R. Formenti | RINA | <i>R. Formenti</i> | 23-08-99 |
| W. Daoud | Petromec | <i>W. Daoud</i> | 23-08-99 |
| Y. Perreault | Davie Industries | <i>Y. Perreault</i> | 99-08-20 |

É COPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PINHEIRO

DIRETOR

DIVISÃO DE SERVIÇOS TÉCNICOS

TEST - DATE DE L'ÉTALONNAGE/Calibration Date: August 20, 1999

EMPLACEMENT/Location: Davie Industries Inc., Lévis (Québec)

Plate Shop - Low Bay

IDENTIFICATION DE LA BALANCE/Scale Identification

MARQUE/Mark: Console: Masstron M5000 - Scale Frame: Cranemate 25 tons

TYPE: Strain Gauge

NUMÉRO/Number: P-1311 (Davie), 5105 (Calibration Certificate)

PRÉCISION/Precision: 0.0008 %

Page 2 of 2

| Nº POIDS/
Weight No. | DIMENSION | COMPOSITION
(C) ACIER/Steel
(D) BÉTON/Concrete | MASSE/Mass
(kg) | REMARQUES/Remarks |
|-------------------------|--------------|--|--------------------|-------------------|
| N | 5' x 5' x 5' | B | 8829 | |
| O | 5' x 5' x 5' | B | 8936 | |
| P | 5' x 5' x 5' | B | 8716 | |
| Q | 5' x 5' x 5' | B | 8809 | |
| R | 5' x 5' x 5' | B | 8850 | |
| S | 5' x 5' x 5' | B | 8836 | |
| T | 5' x 5' x 5' | B | 8845 | |
| U | 5' x 5' x 5' | B | 8838 | |
| V | 5' x 5' x 5' | B | 8986 | |
| W | 5' x 5' x 5' | B | 8673 | |
| X | 5' x 5' x 5' | B | 8217 | |
| | | | | |
| | | | | |

TÉMOINS/Witnesses

| NOM/Name | COMPAGNIE/Company | SIGNATURE | DATE |
|--------------|-------------------|----------------------|----------|
| M. Evans | Noble Denton | <i>Mark S. Evans</i> | 23-08-99 |
| R. Formenti | RINA | <i>R. Formenti</i> | 23-08-99 |
| W. Daoud | Petromec | <i>W. Daoud</i> | 23/08/99 |
| Y. Perreault | Davie Industries | <i>Y. Perreault</i> | 99-08-20 |

É COPIA FEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTA

1260

Appendix B

Inclining Test Readings – Drafts, Pendulums, Wind & Mooring Tensions

1260

É Cópia de Documento Original
DIRETOR
DIREÇÃO DE SERVIÇOS

BY: FGAQ
DATE: 99.10

PETROBRAS 36

INCLINING TEST IN SEPT. ILES

SUMMARY OF ACTIVITIES / TIME

| DATE | TIME | | ACTIVITIES |
|-------------|-------|--------|---------------------|
| | START | FINISH | |
| PREPARATION | | | |
| 99-10-15 | 12:00 | 20:00 | ANCHORING |
| 99-10-15 | 19:00 | 24:00 | BALLASTING |
| 99-10-16 | 0:00 | 01:00 | BALASTING |
| INCLINING | | | |
| 99-10-16 | 12:00 | 13:00 | DRAUGHT READINGS |
| 99-10-16 | 13:00 | 13:10 | MARK ZERO |
| | 13:10 | 14:25 | WEIGHT SHIFT 1 |
| | 14:25 | 14:38 | PENDULUM READING |
| | 14:30 | 15:50 | WEIGHT SHIFT 2 |
| | 15:49 | 16:03 | PENDULUM READING |
| | 16:03 | 16:53 | WEIGHT SHIFT 3 |
| | 16:53 | 17:00 | PENDULUM READING |
| | 17:05 | 18:00 | WEIGHT SHIFT 4 |
| | 18:00 | 18:15 | PENDULUM READING |
| | 18:40 | 19:20 | DRAUGHT READING |
| | 19:20 | 20:24 | WEIGHT SHIFT 5 |
| | 20:24 | 20:46 | PENDULUM READING |
| | 20:45 | 21:45 | WEIGHT SHIFT 6 |
| | 21:51 | 21:59 | PENDULUM READING |
| | 22:00 | 22:55 | WEIGHT SHIFT 7 |
| | 22:55 | 23:05 | PENDULUM READING |
| | 23:05 | 24:00 | WEIGHT SHIFT 8 |
| | 24:00 | 24:10 | PENDULUM READING |
| | 24:10 | | INCLINING COMPLETED |

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DIRETOR
SERVICOES DE MANUTENCAO



Petrobras - 36
Inclining Test



Draft Reading Measurement

| Draft Description | Draft Set No.1 | | Draft Set No.2 | | Draft Set No.3 | | Draft Set No.4 | |
|--------------------------------|----------------|-------|----------------|---------------------------|----------------|------|----------------|------|
| | Draft | Time | Draft | Time | Draft | Time | Draft | Time |
| Draft Port Aft = | 18860 | 12:10 | 18870 | 18:55 | | | | |
| Draft Port Fwd = | 18900 | 12:45 | 18950 | 18:45 | | | | |
| Draft Stbd Aft = | 18890 | 12:18 | 18860 | 19:00 | | | | |
| Draft Stbd Fwd = | 18890 | 12:30 | 18920 | 19:10 | | | | |
| Draft Central C. Aft =
Port | 18970 | 13:00 | 18950 | 18:55
19:12 | | | | |
| Draft Central C. Fwd =
STBD | — | | 18940 | 19:20 | | | | |

By:

J. TORRESAN.

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INSTITUTO NACIONAL DE GEOMATICA

Weight Shift Measurement

| Pendulum Shift | Time of Lecture | Measured Distance From Reference 0 | | |
|----------------|-----------------|------------------------------------|---------------|---------------|
| | | Pendulum No.1 | Pendulum No.2 | Pendulum No.3 |
| 1 17/10/99 | 14:32 | 147 | 165 | 163 |
| 2 | 15:56 | 311.5 | 346 | 344.5 |
| 3 | 17:00 | 170 | 189 | 188.5 |
| 4 | 18:17 | 7 | 8 | 7 |
| 5 | 20:38 | -126 | -143 | -143 |
| 6 | 22:00 | -303.5 | -339 | -337.7 |
| 7 | 23:07 | -174.5 | -197 | -196 |
| 8 18/10/99 | 00:08 | 7 | 6 | 5 |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |

Pendulum Length No.1 (C.C.) 17665 mm

Pendulum Length No.2 (P.S.) 19677 mm

Pendulum Length No.3 (P.A.) 19595 mm

No.4 (C.C.) 18240 mm

Note:

Distances are measured in mm.

Distances are positive on Forward Shift and Negative on Aft Shift.

S.W. DENSITY : 1.0255 T/L
17.10.99 @ 03:00 SAMPLE (1) FROM STBD AFT
17.10.99 @ 03:00 SAMPLE (2) FROM STBD FWD

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JOSE CARLOS PIMENTEL GARCIA
DIRETOR
ENGENHEIRO DE PROJETOS

Davie:

RINA:

Noble Denton:

Petromec:



Secondary Pendulum & Inclinerometers Information

| Shift | Time of Lecture | Pendulum No.4 | TRANSV.
Inclinometer No.1 | LONG.
Inclinometer No.2 |
|-------|-----------------|----------------------|------------------------------|-----------------------------------|
| | | Transv. Displacement | Heel (deg.) | Trim (deg.) |
| 1 | | -4 mm | 0°-0'-0" | 0°-27'-35" |
| 2 | | -12 mm | 0°-0'-20" | 0°-59'-20" |
| 3 | | -9 mm | 0°-0'-20" | 0°-31'-40" |
| 4 | | -2 mm | 0°-0'-0" | 0°-0'-20" |
| 5 | | -11 mm | N.A. | N.A. |
| 6 | | -5.5 mm | 0°-0'-20" | 359° 00' 10" |
| 7 | | +1 mm | 0°-0'-45" | 359°-24'-30" |
| 8 | | -11 mm | 0°-0'-0" | 0°-0'-20" |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | (+) START UP | 20 ... FWD DOWN
CO ... FWD UP. |

By:

T. PERREAU

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DIRETOR
DIVISÃO DE SERVIÇOS GASTROIN



WINCH LOAD DATA

| SHIFT
NUMBER | TIME/
DATE | WINCH NUMBER | | | | | | | |
|-----------------|-------------------|--------------------------|----------------------|--------------------------|----------------------|--------------------------|----------------------|--------------------------|----------------------|
| | | 12 (Stbd Fwd) | | 16 (Stbd Aft) | | 5 (Port Fwd) | | 1 (Port Aft) | |
| | | VERTICAL
FORCE
(t) | LENGTH
OUT
(m) | VERTICAL
FORCE
(t) | LENGTH
OUT
(m) | VERTICAL
FORCE
(t) | LENGTH
OUT
(m) | VERTICAL
FORCE
(t) | LENGTH
OUT
(m) |
| 1 | 14:33
17/10/99 | 10 | / | 12 | / | 9 | / | 15 | / |
| 2 | 15:50 | 11 | / | 13 | / | 9 | / | 15 | / |
| 3 | 17:00 | 12 | / | 12 | / | 9 | / | 15 | / |
| 4 | 18:17 | 11 | / | 12 | / | 9 | / | 15 | / |
| 5 | 20:38 | 11 | / | 12 | / | 9 | / | 15 | / |
| 6 | 22:01 | 11 | / | 12 | / | 9 | / | 14 | / |
| 7 | 23:07 | 11 | / | 12 | / | 9 | / | 14 | / |
| 8 | 00:08
18/10/99 | 10 | / | 13 | / | 9 | / | 15 | / |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | |

By: _____

43
227

File: form.xls

File: form.xls



Shift 3

Wind Speed Measurement

42
507

221
73

[illegible]

Location of Reading Station:

Bridge

Note: Reading of Wind Speed in CCR Room or Radio Room are taken on a 2 sec. Mean setting

By Y. W. Wells

Date: 17/10/25

File: form.xls

ec. Mean setting



Shift 4

Wind Speed Measurement.

504

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42

Bridge

九

[illegible]

Location of Reading Station:

Bridge

~~É Cópia Fiel do Documento Original~~

Mean setting.
JOSE CARLOS PIMENTEL OLIVEIRA
DIRETOR
DIVISÃO DE SERVIÇOS CARCERÁRIOS

Note: Reading of Wind Speed in CCR Room or Radio Room are taken on a 2 sec. Mean setting.

B. Yves Paradi

Date: 17/10/99

File: form.xls

Draft reading
Wind Speed Measurement

22

Location of Reading Station:

Note: Reading of Wind Speed in CCR Room or Radio Room are taken on a 2 sec. Mean setting.

Date: 17/10/99

File: form.xls

Draft reading
Wind Speed Measurement
Bridge

| Time | Wind Speed (m/s) | Wind Heading (deg.) | Time | Wind Speed (m/s) | Wind Heading (deg.) | Time | Wind Speed (m/s) | Wind Heading (deg.) |
|-------|------------------|---------------------|-------|------------------|---------------------|-------|------------------|---------------------|
| | | | 18.47 | 1.6 | 350 | | | |
| | | | 18.50 | 1.4 | 356 | | | |
| | | | 18.51 | 1.4 | 355 | | | |
| | | | 18.52 | 1.3 | 353 | | | |
| | | | 18.53 | 1.4 | 354 | | | |
| | | | 18.54 | 1.6 | 355 | | | |
| | | | 18.55 | 1.4 | 354 | | | |
| | | | 18.56 | 1.6 | 356 | | | |
| | | | 18.57 | 1.6 | 356 | | | |
| | | | 18.58 | 1.8 | 359 | | | |
| | | | 18.59 | 1.9 | 359 | | | |
| | | | 19.00 | 1.8 | 001 | | | |
| 19.01 | 1 | | 19.01 | 2.1 | 013 | 19.01 | 2 | |
| 19.02 | 1 | | 19.02 | 1.3 | 23 | 19.02 | 1 | |
| 19.04 | - | | 19.04 | 1.3 | 24 | 19.04 | - | |
| 19.05 | - | | 19.05 | 1.0 | 24 | 19.05 | 2 | |
| 19.06 | - | | 19.06 | 1.0 | 24 | 19.06 | - | |
| 19.07 | 1 | | 19.07 | 1.3 | 24 | 19.07 | 1 | |
| 19.08 | 2 | | 19.08 | 1.4 | 24 | 19.08 | 2 | |
| 19.09 | 1 | | 19.09 | 1.0 | 29 | 19.09 | 1 | |
| 19.10 | 1 | | 19.10 | 1.1 | 40 | 19.10 | 2 | |
| 19.11 | 1 | | 19.11 | 1.1 | 46 | 19.11 | 2 | |
| 19.12 | 1 | | 19.12 | 0.8 | 47 | 19.12 | 2 | |

Location of Reading Station:

Bridge

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Note: Reading of Wind Speed in CCR Room or Radio Room are taken on a 2 sec. Mean setting.

JOSE CARLOS PINHEIRO GUSMÃO
DIVISÃO DE SERVIÇOS PARTICIPAIS

By: Yves P. [Signature]
Date: 17/11/09
File: form.xls



DIAGNÓSTICO DE SERVIÇOS EDUCACIONAIS

File: form.xls

Spirit of Colombus

INCLINING TEST

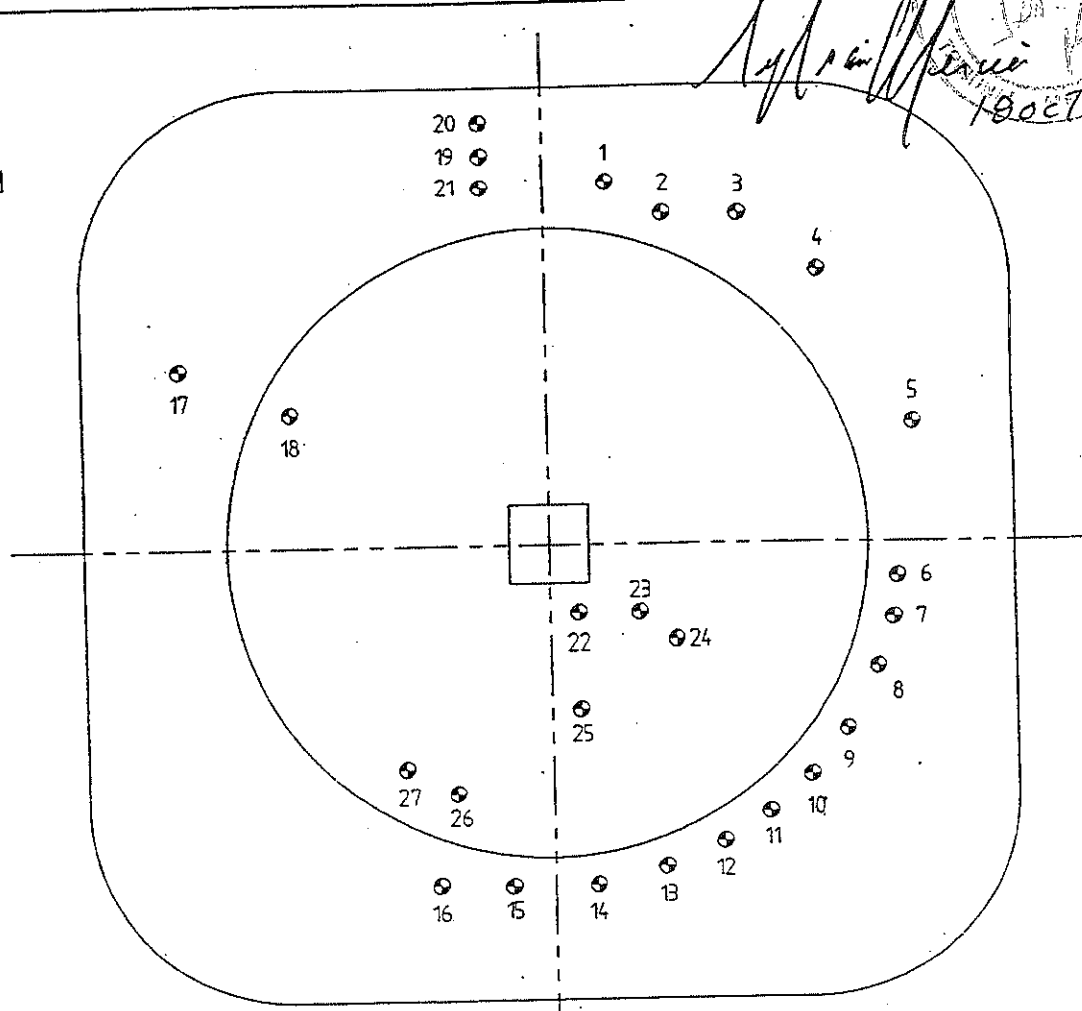
SOUNDING OF TANKS AFTER INCLINING TEST.

| TANK | SOUNDING | DATE |
|-----------------------------|----------|---------------|
| TOTAL WATER TANK NO. 1 BERT | 4573 mm | 18/10/99 → II |
| TOTAL WATER TANK NO. 1 STSD | 4805 mm | ↓ |
| DIESEL OIL SERVICE TANK | 1460 mm | |

BY: STEWART MERCIER

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DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFICOS

fwd



Aft - star column (level 3)

| Sounding description | Lmeasured | Lmax | Lliquid |
|-----------------------------------|--------------|-------|----------|
| 1 - Void space 33 star1 | | | |
| 2 - Sea water tank No 13 star | 31050 | 31270 | |
| 3 - Hydr. well | | | |
| 4 - Sea water tank No 17 star | 31340 | 31560 | |
| 5 - Void space 30a star | | | |
| 6 - Void space 33 star2 | | | |
| 7 - Sea water tank No 18 star | 31140 | 31360 | |
| 8 - Sea water tank No 20 star | 31100 | 31320 | |
| 9 - Sea water tank No 19 star | 31260 | 31480 | |
| 10 - Sea water tank No 22 star | 31070 | 31290 | |
| 11 - Void space 31 star | | | |
| 12 - Potable water tank No 1 star | 8145 | 8405 | |
| 13 - Void space 30 star | | | |
| 14 - Void space 45 star | | | |
| 15 - Base oil tank No 1 star | 36' 1/2" | 11200 | |
| 16 - Sea water tank No 21 star | 30780 | 31000 | |
| 17 - Void space 28 star | | | |
| 18 - Waste oil tank No 1 star | 27' 7 1/2" | 8640 | |
| 19 - Drill water tank No 14 star | 30810 | 31030 | |
| 20 - Fuel oil tank No 12 star | 101' 11 1/4" | 31290 | |
| 21 - Drill water tank No 15 star | 31050 | 31270 | |
| 22 - Sea water tank No 16 star | 29690 | 29910 | 5312+209 |
| 23 - Chain locker No 8 star | | | |
| 24 - Chain locker No 4 star | | | |
| 25 - | | | |
| 26 - Sea water column No 26 star | 20660 | 20880 | 10010 |
| 27 - Sea water column No 25 star | 17480 | 17700 | |

K(water)=209

K(oil)=277

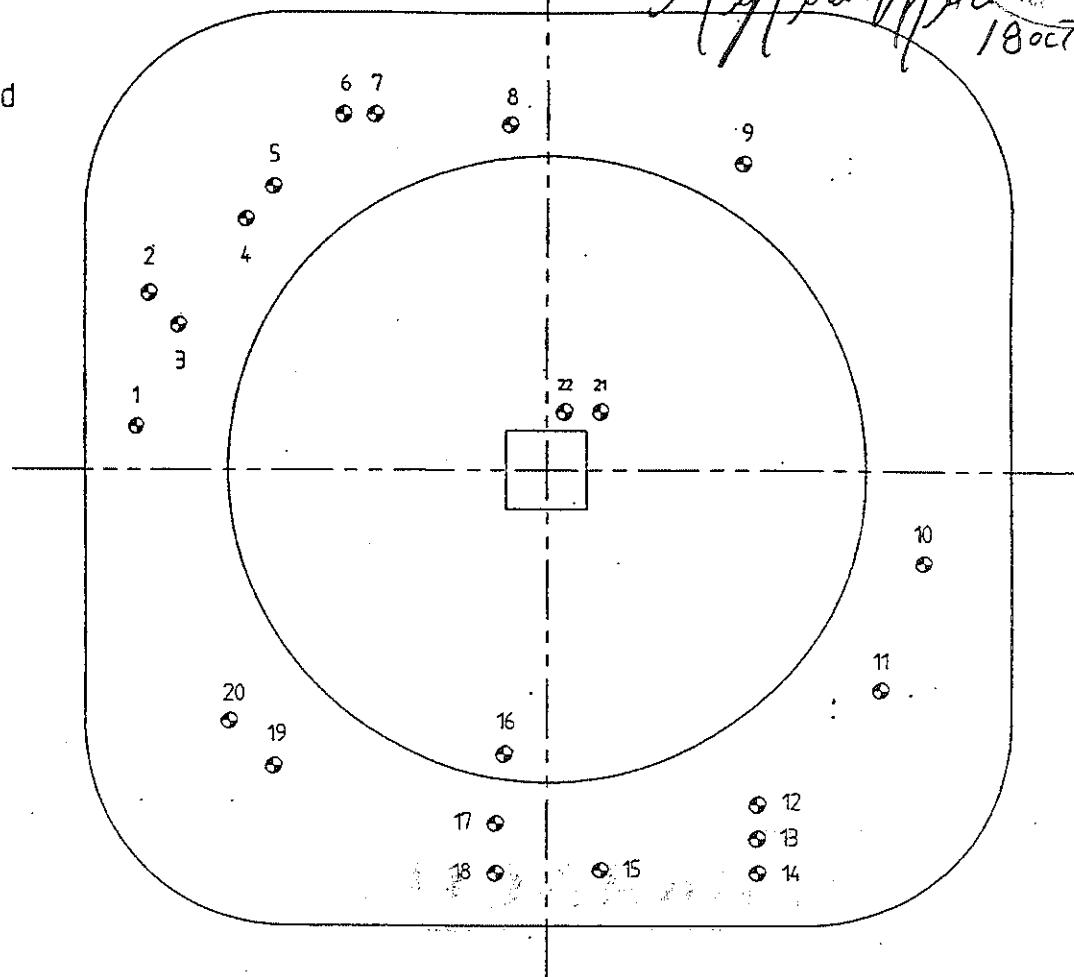
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JOSE CARLOS PIMENTEL OLIVEIRA

NOLE SCHMIDT'S CARTONING

0.100M

fwd



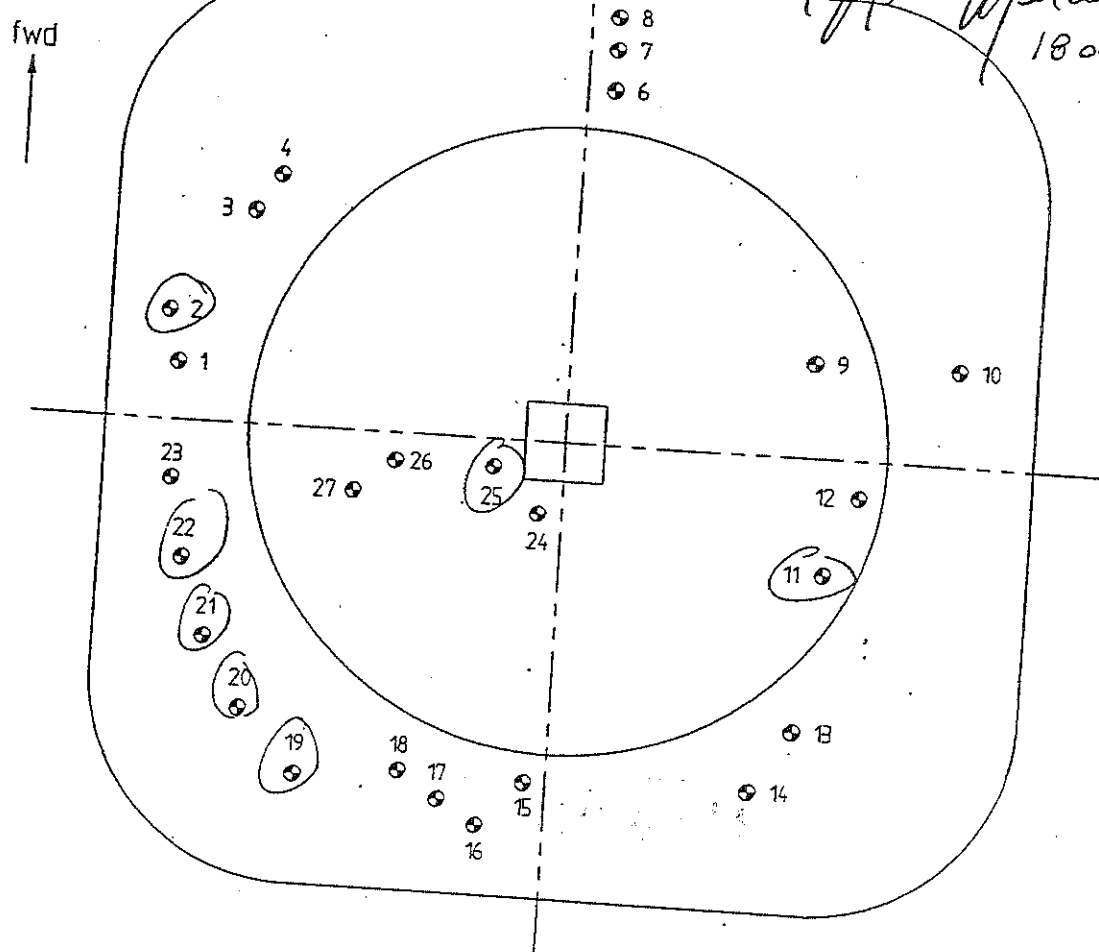
Fwd - port column (level 3)

| Sounding description | Lmeasured | Lmax | Lliquid |
|----------------------------------|-----------|-------|---------|
| 1 - Chain locker No 6 port | | | |
| 2 - Sea water tank No 4 port | 30970 | 31190 | |
| 3 - Sea water tank No 7 port | 31410 | 31630 | |
| 4 - Sea water tank No 3 port | | | |
| 5 - Sea water tank No 2 port | 31030 | 31250 | |
| 6 - Void space 46 port | | | |
| 7 - Void space 29 port | | | |
| 8 - Chain locker No 2 port | | | |
| 9 - Sea water tank No 1 port | 31080 | 31300 | |
| 10 - Void space No 27 port | | | |
| 11 - Void space No 32 port 2 | | | |
| 12 - Drill water tank No 9 port | 30520 | 30740 | |
| 13 - Drill water tank No 8 port | 30530 | 30750 | |
| 14 - Fuel oil tank No 10 port | 100' 2" | 30750 | |
| 15 - Sea water column No 23 port | 19220 | 19440 | |
| 16 - Sea water column No 24 port | 20850 | 21070 | |
| 17 - Sea water tank No 11 port | 31340 | 31560 | |
| 18 - | | | |
| 19 - Sea water tank No 6 port | 31530 | 31750 | |
| 20 - Void space 29a port | | | |
| 21 - Sea water tank No 5 port | 29890 | 30110 | |
| 22 - | | | |

K(water)=209

K(oil)=217

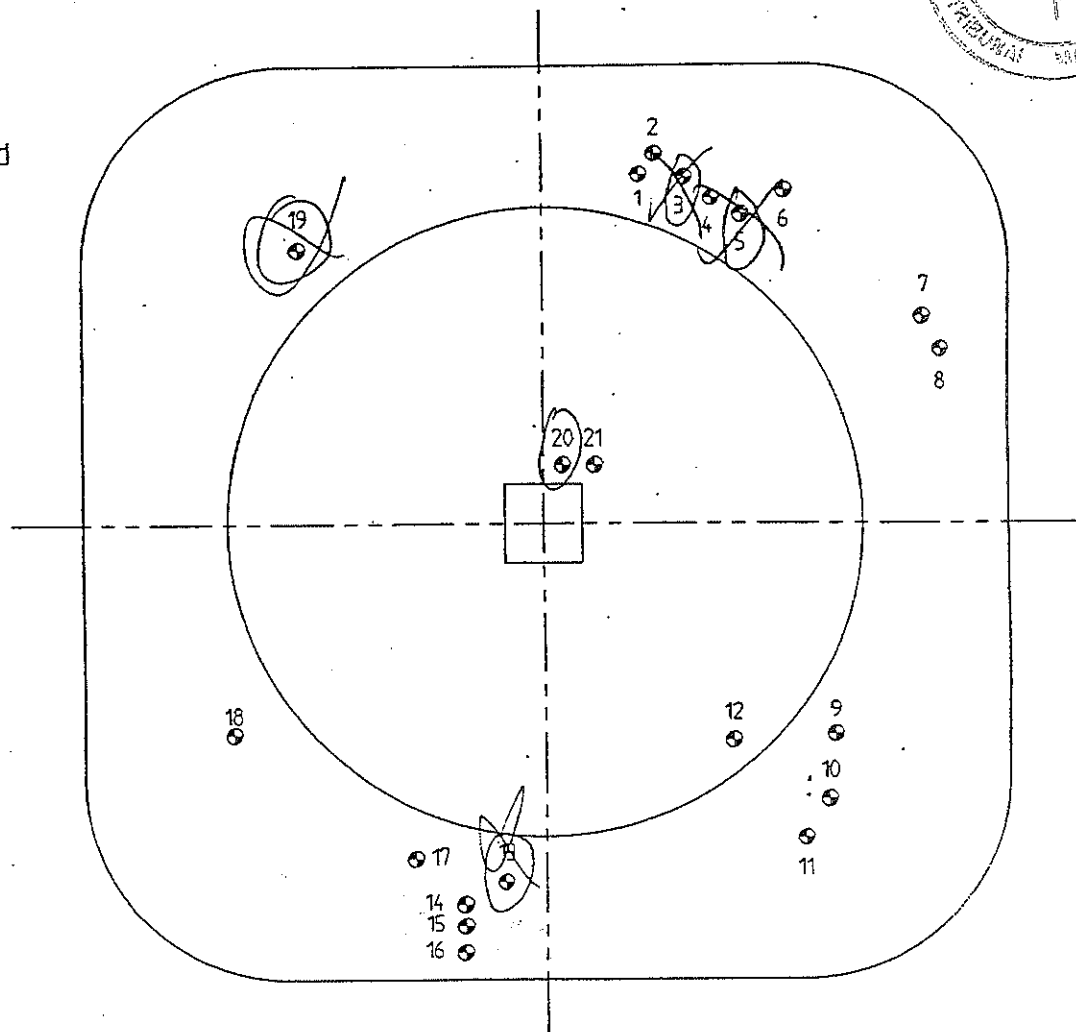
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DIVISÃO DE SERVIÇOS GASTRONÔMICOS



Aft - port column (level 3)

$$5180 + 209 = 5389 \text{ M}$$
 0.075μ

fwd



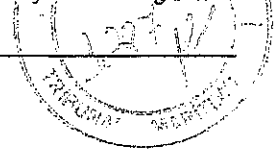
Fwd - stbd column (Level 3)

| Sounding description | Lmeasured | Lmax | Lliquid |
|------------------------------------|-------------|-------|------------------------|
| 1 - Void space 29 stbd | | | |
| 2 - Void space 46 stbd | | | |
| ③ - Sea water tank No 2 stbd | 31245 | 31465 | $11650 + 209 = 11.859$ |
| 4 - Sea water tank No 3 stbd | 31210 | 31430 | |
| ⑤ - Sea water tank No 7 stbd | 31220 | 31440 | $11665 + 209 = 11.874$ |
| 6 - Sea water tank No 4 stbd | 31280 | 31500 | |
| 7 - Void space 32 stbd1 | | | |
| 8 - Chain locker No 7 forward stbd | | | |
| 9 - Void space 29a stbd | | | |
| 10 - Sea water tank No 6 stbd | 31590 | 31810 | |
| 11 - Sea water tank No 11 stbd | 31340 | 31560 | |
| 12 - Sea water column No 24 stbd | 20710 | 20930 | |
| ⑬ - Sea water column No 23 stbd | 19050 | 19270 | VIDE 0 |
| 14 - Drill water tank No 9 stbd | 30560 | 30780 | |
| 15 - Drill water tank No 8 stbd | 30580 | 30800 | |
| 16 - Fuel oil tank No 10 stbd | 100' 3 1/8" | 30780 | |
| 17 - Void space 32 stbd2 | | | |
| 18 - Void space 27 stbd | | | |
| ⑲ - Sea water tank No 1 stbd | 31100 | 31320 | $11655 + 209 = 11.864$ |
| ⑳ - Sea water tank No 5 stbd | 29860 | 30080 | $7560 + 209 = 7.769$ |
| ㉑ - | | | |

K(water)=209

K(oil)=217

Handwritten signature: A. Nain M. Mercier 18 at 9



Appendix C

Determination of Metacentric Height and Lightship Characteristics

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JOSE CARLOS PIMENTEL GUSMÃO
DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFIAIS

Ship Data

| | | |
|--|------|-----------|
| Length Between Perpendiculars (Fr 74 - Fr 0) | LBP: | 112.776 m |
| Breadth Between Pontoons at Ends | BP: | 77.75 m |
| Height to Main Deck at Centreline | DM: | 42.980 m |
| Breadth of Deck | BD: | 68.580 m |

Data of Inclining Test

| | | | |
|--------------------|---------------------------------|------------------------------------|-----------------------|
| Date of Experiment | <i>Sunday 17th October 1999</i> | | |
| Place of Test | <i>Sept Îles, Canada</i> | | |
| Start of Test | <i>1130hrs</i> | | |
| Finish of Test | <i>0010hrs</i> | | |
| Wind | Speed | <i>4.5 m/s</i> | Hdg (T): <i>0 Deg</i> |
| Tide | Speed: | <i>0 m/s</i> | Hdg (T): <i>0 Deg</i> |
| Waves/Swell | HS: | <i>0.15 m</i> | Hdg (T): <i>0 Deg</i> |
| Mean Water Density | $\rho_{\text{sea water}}$ | <i>1.0255 tonnes/m³</i> | |

Unit Status

| | | | | |
|---------------------|---------------------|-----------------|-------------------|----------------|
| Location of Unit | <i>50°11.14N</i> | <i>66°27.8W</i> | Unit Heading (T): | <i>321°</i> |
| Movable Weights | <i>Free Hanging</i> | | Water Depth | <i>32.00 m</i> |
| Situation of Bilges | <i>Clean</i> | | | |
| Mooring Anchors | <i>Slackened</i> | | | |
| Mooring Ropes | <i>None</i> | | | |

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DIRETOR
DIVISÃO DE SERVIÇOS CARTOGRAFICOS

Determination of Displacement prior to Inclining Test

Average Water Density in Test Place 1.0255 tonnes/m³
 Length Between Perpendiculars (LBP) = 112.776 m
 Distance Between Draft Marks (LM) = 79.25 m (See sketch attached)

DRAFTS FROM U.S.K. (metres)

| | Aft | Midships | Fore |
|-----------|---------------------|---------------------|---------------------|
| Starboard | 18.890 | 18.970 | 18.890 |
| Port | 18.860 | 18.970 | 18.900 |
| Average | 18.875 | 18.970 | 18.895 |
| | (T _{aft}) | (T _{mid}) | (T _{Fwd}) |

Draft calculations on perpendiculars

C1, C2, C3 values *
 *(see sketch attached)

$$T_{AP} = T_{aft} + C1 \cdot (T_{aft} - T_{fwd}) / Lm \quad T_{AP} = 18.87 \text{ m} \quad C1 = 16.76 \text{ m}$$

$$T_{\otimes} = T_{mid} - C2 \cdot (T_{aft} - T_{fwd}) / Lm \quad T_{\otimes} = 18.97 \text{ m} \quad C2 = 0.70 \text{ m}$$

$$T_{FP} = T_{fwd} - C3 \cdot (T_{aft} - T_{fwd}) / Lm \quad T_{FP} = 18.90 \text{ m} \quad C3 = 16.76 \text{ m}$$

Average Draft from USK: $T_{MEAN} = (T_{AP} + 4 \cdot T_{\otimes} + T_{FP}) / 6 = 18.94 \text{ m}$

Draft Correction of SW Density $T'_{MEAN} = T_{MEAN} \cdot (SW_{actual} / 1.025) = 18.95 \text{ m}$

Unit's Trim $Trim = T_{fwd} - T_{aft} = -0.03 \text{ m}$

Longitudinal Centre of Flotation LCF (from $\otimes$) = -0.04 m

Layer Correction $t = LCF / LBP \times Trim = 0.000 \text{ m}$

Draft at LCF (inc Layer Correction) Draft at LCF (T'_{LCF}) = 18.950 m

Displacement (at Draft T'_{LCF}) Displacement (Δ) = 51835.6 Tonnes

Hydrostatic Properties of Unit

| DRAFT
(m) | DISPL
(tonnes) | LCB
(m) | TCB
(m) | VCB
(m) | WPA
(m ²) | LCF
(m) | TCF
(m) | KMT
(m) | KML
(m) |
|--------------|-------------------|------------|------------|------------|--------------------------|------------|------------|------------|------------|
| 18.95 | 51835.6 | -0.72 | -0.02 | 7.92 | 1485.1 | -0.04 | -0.04 | 27.30 | 27.80 |

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 JOSE CARLOS PIMENTEL (assinado)
 DIRETOR
 DIVISÃO DE SERVIÇOS CARTOGRAFIAIS

Determination of Displacement After 4th Shift

Average Water Density in Test Place 1.0255 tonnes/m³
Length Between Perpendiculars (LBP) = 112.776 m
Distance Between Draft Marks (LM) = 79.25 m (See sketch attached)

DRAFTS FROM U.S.K. (metres)

| | Aft | Midships | Fore |
|-----------|---------------------|---------------------|---------------------|
| Starboard | 18.860 | 18.940 | 18.920 |
| Port | 18.870 | 18.950 | 18.950 |
| Average | 18.865 | 18.945 | 18.935 |
| | (T _{aft}) | (T _{mid}) | (T _{Fwd}) |

Draft calculations on perpendiculars

C1, C2, C3 values *
*(see sketch attached)

$$T_{AP} = T_{aft} + C1 \cdot (T_{aft} - T_{fwd}) / Lm \quad T_{AP} = 18.85 \text{ m} \quad C1 = 16.76 \text{ m}$$

$$T_{\otimes} = T_{mid} - C2 \cdot (T_{aft} - T_{fwd}) / Lm \quad T_{\otimes} = 18.95 \text{ m} \quad C2 = 0.70 \text{ m}$$

$$T_{FP} = T_{fwd} - C3 \cdot (T_{aft} - T_{fwd}) / Lm \quad T_{FP} = 18.95 \text{ m} \quad C3 = 16.76 \text{ m}$$

Average Draft from USK: $T_{MEAN} = (T_{AP} + 4 \cdot T_{\otimes} + T_{FP}) / 6$ 18.93 m

Draft Correction of SW Density $T_{MEAN} = T_{MEAN} \cdot (SW_{actual} / 1.025)$ 18.94 m

Unit's Trim $Trim = T_{fwd} - T_{aft}$ -0.10 m

Longitudinal Centre of Flotation $LCF \text{ (from } \otimes \text{)} =$ -0.04 m

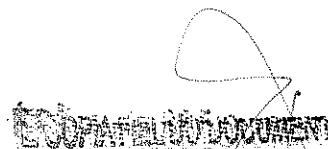
Layer Correction $t = LCF / LBP \times Trim$ 0.000 m

Draft at LCF (inc Layer Correction) $Draft \text{ at LCF } (T'_{LCF})$ 18.940 m

Displacement (at Draft T'_{LCF}) $Displacement (\Delta) =$ 51820.4 Tonnes

Hydrostatic Properties of Unit

| DRAFT
(m) | DISPL.
(tonnes) | LCB
(m) | TCB
(m) | VCB
(m) | WPA
(m ²) | LCF
(m) | TCF
(m) | KMT
(m) | KML
(m) |
|--------------|--------------------|------------|------------|------------|--------------------------|------------|------------|------------|------------|
| 18.94 | 51820.4 | -0.72 | -0.02 | 7.92 | 1485.1 | -0.04 | -0.04 | 27.30 | 27.80 |

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DIRETOR

Proposed Inclining Test Weights & Levers

| Start Area | Finish Area | Weight ID | Weight (tonnes) | Lever Arm (m) | Moment (t-m) | Total Moment /Area |
|------------|-------------|-----------|-----------------|---------------|--------------|--------------------|
| 1 | 4 | A | 8.810 | 78.38 | 690.5 | 1371.0 |
| | | B | 8.681 | 78.38 | 680.4 | |
| 2 | 5 | C | 8.202 | 67.17 | 550.9 | 3855.3 |
| | | D | 8.282 | 67.17 | 556.3 | |
| | | E | 8.143 | 67.17 | 547.0 | |
| | | F | 7.989 | 67.17 | 536.6 | |
| | | G | 8.175 | 67.17 | 549.1 | |
| | | W | 8.688 | 67.17 | 583.6 | |
| | | K | 7.917 | 67.17 | 531.8 | |
| 3 | 6 | T | 8.860 | 58.52 | 518.4 | 1563.2 |
| | | U | 8.853 | 58.52 | 518.0 | |
| | | V | 9.001 | 58.52 | 526.7 | |
| Total | | | 101.601 | | | 6789.4 |

| Area | | Weight ID | Weight (tonnes) | Lever Arm (m) | Moment (t-m) | Total Moment /Area |
|-------|---|-----------|-----------------|---------------|--------------|--------------------|
| 4 | 1 | L | 8.066 | 78.38 | 632.2 | 1247.4 |
| | | M | 7.849 | 78.38 | 615.2 | |
| 5 | 2 | N | 8.844 | 67.17 | 594.1 | 4095.3 |
| | | O | 8.951 | 67.17 | 601.2 | |
| | | P | 8.731 | 67.17 | 586.5 | |
| | | Q | 8.824 | 67.17 | 592.7 | |
| | | R | 8.865 | 67.17 | 595.5 | |
| | | S | 8.851 | 67.17 | 594.5 | |
| | | H | 7.903 | 67.17 | 530.8 | |
| 6 | 3 | I | 8.162 | 58.52 | 477.6 | 1445.4 |
| | | J | 8.307 | 58.52 | 486.1 | |
| | | X | 8.232 | 58.52 | 481.7 | |
| Total | | | 101.585 | | | 6788.1 |

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Inclining Test Weight Shifts

| Shift No | Description | Weight | Lever | Moment | Σ Moment | Approx Induced Trim (m) | Approx Induced Trim (Deg) |
|----------|------------------------------------|--------|---------|---------|-----------------|-------------------------|---------------------------|
| 1 | A & B -> fore

T,U,V -> Fore | 8.81 | 78.49 | 691.47 | 2932.1 | 0.929 | 0.472 |
| | | 8.681 | 78.49 | 681.35 | | | |
| | | 8.86 | 58.37 | 517.14 | | | |
| | | 8.853 | 58.37 | 516.73 | | | |
| | | 9.001 | 58.37 | 525.37 | | | |
| 2 | C,D,E,F,G,W, -> Fore | 8.202 | 67.17 | 550.93 | 3323.5 | 1.053 | 0.535 |
| | | 8.282 | 67.17 | 556.30 | | | |
| | | 8.143 | 67.17 | 546.97 | | | |
| | | 7.989 | 67.17 | 536.62 | | | |
| | | 8.175 | 67.17 | 549.11 | | | |
| 3 | A & B -> Aft

T,U,V -> Aft | 8.81 | -78.487 | -691.47 | -2932.1 | -0.929 | -0.472 |
| | | 8.681 | -78.487 | -681.35 | | | |
| | | 8.86 | -58.368 | -517.14 | | | |
| | | 8.853 | -58.368 | -516.73 | | | |
| | | 9.001 | -58.368 | -525.37 | | | |
| 4 | C,D,E,F,G,W -> Aft | 8.202 | -67.17 | -550.93 | -3323.5 | -1.053 | -0.535 |
| | | 8.282 | -67.17 | -556.30 | | | |
| | | 8.143 | -67.17 | -546.97 | | | |
| | | 7.989 | -67.17 | -536.62 | | | |
| | | 8.175 | -67.17 | -549.11 | | | |
| 5 | L & M -> Aft

I,J,X -> Aft | 8.066 | -78.487 | -633.08 | -2690.9 | -0.852 | -0.433 |
| | | 7.849 | -78.487 | -616.04 | | | |
| | | 8.162 | -58.368 | -476.40 | | | |
| | | 8.307 | -58.368 | -484.86 | | | |
| | | 8.232 | -58.368 | -480.49 | | | |
| 6 | N,O,P,Q,R,S -> Aft | 8.844 | -67.17 | -594.05 | -3564.4 | -1.129 | -0.573 |
| | | 8.951 | -67.17 | -601.24 | | | |
| | | 8.731 | -67.17 | -586.46 | | | |
| | | 8.824 | -67.17 | -592.71 | | | |
| | | 8.865 | -67.17 | -595.46 | | | |
| 7 | L & M -> Fore

I,J,X -> Fore | 8.066 | 78.49 | 633.08 | 2690.9 | 0.852 | 0.433 |
| | | 7.849 | 78.49 | 616.04 | | | |
| | | 8.162 | 58.37 | 476.40 | | | |
| | | 8.307 | 58.37 | 484.86 | | | |
| | | 8.232 | 58.37 | 480.49 | | | |
| 8 | N,O,P,Q,R,S -> Fore | 8.844 | 67.17 | 594.05 | 3564.4 | 1.129 | 0.573 |
| | | 8.951 | 67.17 | 601.24 | | | |
| | | 8.731 | 67.17 | 586.46 | | | |
| | | 8.824 | 67.17 | 592.71 | | | |
| | | 8.865 | 67.17 | 595.46 | | | |

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JOSE CARLOS PIMENTEL GUSMÃO
1.129
0.573

Length & Location Of Pendulums

| Trim Angle Measuring Devices | | | |
|------------------------------|--------|---------------------|--------------|
| Number | Length | Location | Type |
| 1 | 17665 | Central Caisson | Pendulum |
| 2 | 19677 | Fwd Stbd Lift Trunk | Pendulum |
| 3 | 19595 | Port Aft Lift Trunk | Pendulum |
| 4 | - | Central Caisson | Inclinometer |

| Heel Angle Measuring Devices | | | |
|------------------------------|--------|-----------------|--------------|
| Number | Length | Location | Type |
| 5 | 18240 | Central Caisson | Pendulum |
| 6 | - | Central Caisson | Inclinometer |

Correction of Wind Speeds Recorded during Inclining Test

Vessel Heading 321.0°

| Shift No | Average 1 minute Wind Speed | | | | Reliable Source | Reliable Wind | Wind @ 10m el | Rel. Heading |
|----------|-----------------------------|--------|-------|---------|-----------------|---------------|---------------|--------------|
| | 50t | Bridge | 22 te | Heading | | | | |
| 1 | 2.0 | 0.0 | 1.7 | 336 | Any | 1.8 | 1.6 | 15 |
| 2 | 0.7 | 0.0 | 1.8 | 231 | 22t | 0.7 | 0.6 | 270 |
| 3 | 2.0 | 2.0 | 3.0 | 337 | Any | 2.5 | 2.2 | 16 |
| 4 | 2.0 | 0.0 | 2.8 | 313 | Any | 2.4 | 2.1 | 352 |
| 5 | 3.0 | 0.0 | 3.0 | 149 | 22t | 3.0 | 2.6 | 188 |
| 6 | 3.0 | 1.2 | 3.0 | 143 | 22t | 3.0 | 2.6 | 182 |
| 7 | 3.0 | 3.9 | 1.2 | 81 | 50t | 1.2 | 1.0 | 120 |
| 8 | 5.0 | 3.3 | 3.3 | 98 | 50t | 3.3 | 2.8 | 137 |

(All wind speeds are m/s, all headings are degrees)
(See Appendix D for explanation of wind speed corrections for height)

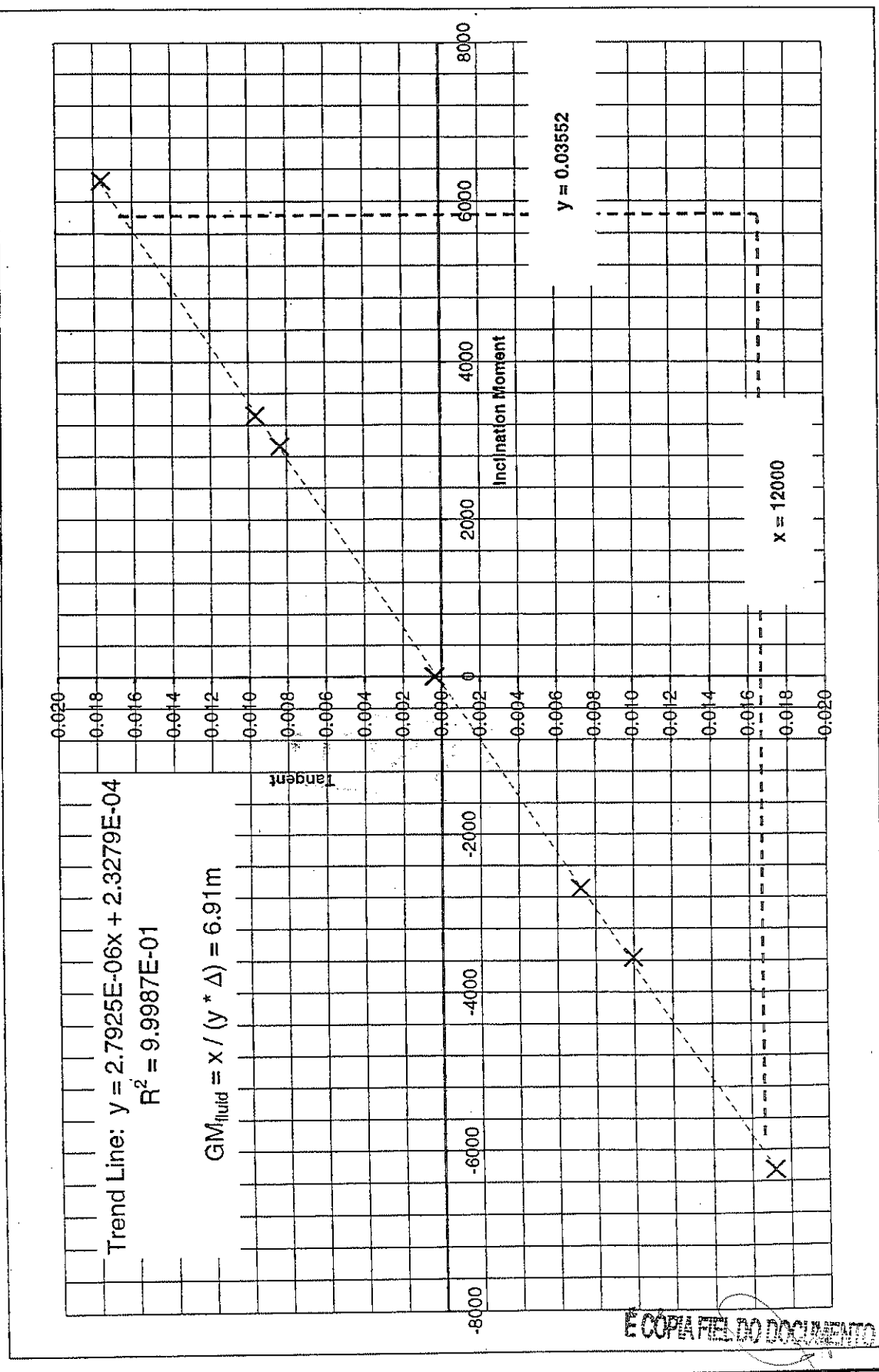
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| Pendulum Lengths | P1 | P2 | P3 |
|------------------|-------|-------|-------|
| | 17665 | 19677 | 19595 |

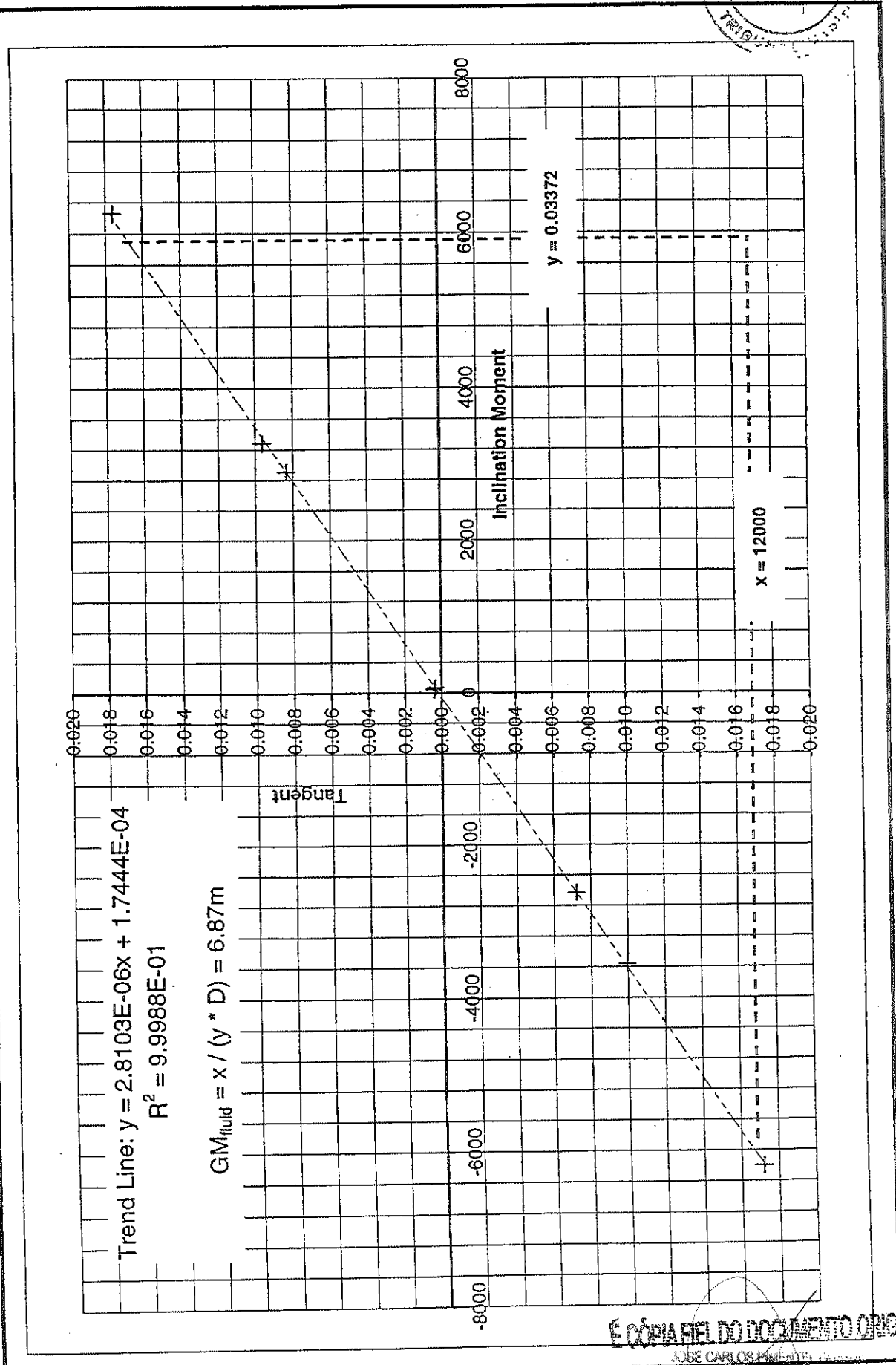
| Δ (MT) | 51820.4 Tonnes |
|---------------|----------------|
|---------------|----------------|

| | | Weight Shift | Shift from Origin (mm) | Tangent *1000 | Mean Tangent *1000 | Shifted Weight (tonnes) | Lever Arm (m) | Heeling Moment (MT-m) | Moment Causing Trim (MT-m) | Correction for Wind | | | |
|-----------|----|--------------|------------------------|---------------|--------------------|-------------------------|---------------|-----------------------|----------------------------|---------------------|----------------|------------|---------------------|
| | | | | | | | | | | Wind Speed (m/s) | Rel. Hdg (Deg) | OTM (MT-m) | Corr. Moment (MT-m) |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 1st Shift | P1 | | 147.0 | 8.322 | | 17.49 | 78.49 | 1372.8 | | | | | |
| | P2 | A-F | 165.0 | 8.385 | 8.342 | 26.71 | 58.37 | 1559.2 | 2932.1 | 1.6 | 15.0 | -22.6 | 2909.5 |
| | P3 | | 163.0 | 8.318 | | | | | | | | | |
| 2nd Shift | P1 | | 311.5 | 17.634 | | 49.48 | 67.17 | 3323.5 | | | | | |
| | P2 | A-F | 346.0 | 17.584 | 17.600 | | | | 6255.6 | 0.6 | 270.0 | 0.0 | 6255.5 |
| | P3 | | 344.5 | 17.581 | | | | | | | | | |
| 3rd Shift | P1 | | 170.0 | 9.624 | | 17.49 | -78.49 | -1372.8 | | | | | |
| | P2 | F-A | 189.0 | 9.605 | 9.616 | 26.71 | -58.37 | -1559.2 | 3323.5 | 2.2 | 16.0 | -42.9 | 3280.6 |
| | P3 | | 188.5 | 9.620 | | | | | | | | | |
| 4th Shift | P1 | | 7.0 | 0.396 | | 49.48 | -67.17 | -3323.5 | 0.0 | | | | |
| | P2 | F-A | 8.0 | 0.407 | 0.387 | | | | | 2.1 | 352.0 | -39.5 | 39.5 |
| | P3 | | 7.0 | 0.357 | | | | | | | | | |
| 5th Shift | P1 | | -126.0 | -7.133 | | 15.92 | -78.49 | -1249.1 | | | | | |
| | P2 | F-A | -143.0 | -7.267 | -7.233 | 24.70 | -58.37 | -1441.7 | -2690.9 | 2.6 | 188.0 | 59.9 | -2631.0 |
| | P3 | | -143.0 | -7.298 | | | | | | | | | |
| 6th Shift | P1 | | -303.5 | -17.181 | | 53.07 | -67.17 | -3564.4 | -6255.3 | | | | |
| | P2 | F-A | -339.0 | -17.228 | -17.202 | | | | | 2.6 | 182.0 | 57.4 | -6197.9 |
| | P3 | | -337.0 | -17.198 | | | | | | | | | |
| 7th Shift | P1 | | -174.5 | -9.878 | | 15.92 | 78.49 | 1249.1 | | | | | |
| | P2 | A-F | -197.0 | -10.012 | -9.964 | 24.70 | 58.37 | 1441.7 | -3564.4 | 1.0 | 120.0 | 5.8 | -3558.6 |
| | P3 | | -196.0 | -10.003 | | | | | | | | | |
| 8th Shift | P1 | | 7.0 | 0.396 | | 53.07 | 67.17 | 3564.4 | 0.0 | | | | |
| | P2 | A-F | 6.0 | 0.305 | 0.319 | | | | | 2.8 | 137.0 | 69.1 | 69.1 |
| | P3 | | 5.0 | 0.255 | | | | | | | | | |



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Determination of Metacentric Height & Unit Centre of Gravity

(Calculations based on Draft Readings after 4th Inclination)

Determination of the Metacentric Height

From the Moment-Tangent Plots MS Excel has calculated the Trend Line Equations

For No Wind Correction $y = 2.793e-06x + 2.328e-4$

$$R^2 = 0.99987$$

$$GM_{fluid} = x / (y * \Delta) \quad 6.91 \text{ m}$$

For Wind Correction $y = 2.8103e-06x + 1.7444e-4$

$$R^2 = 0.99988$$

$$GM_{fluid} = x / (y * \Delta) \quad 6.87 \text{ m}$$

Since the R^2 value for wind correction is closer to 1.0 and the y-intercept value is closer to zero, the wind corrected GM value should be used to derive the lightship vertical Centre of Gravity.

Calculation of Heeling Tangent

| | Aft | Midships | Fore |
|------------------------------------|-----------|-----------|-----------|
| Starboard | 18.860 | 18.940 | 18.920 |
| Port | 18.865 | 18.945 | 18.935 |
| Heeling (DT) (m)* | -0.005 | -0.005 | -0.015 |
| Distance between Dr.Marks - BM (m) | 73.676 | 21.950 | 73.676 |
| TgA = DT/BM | -0.000068 | -0.000228 | -0.000204 |
| Average Tangent (Tang) | -0.000166 | | |

Drafts from USK (metres)

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DEPARTAMENTO DE SERVIÇOS GERAIS
RL-3010.38-1320-974-NBD-946

Hydrostatic Properties of Unit
(Calculations based on Draft Readings after 4th Inclination)

| DRAFT
(m) | DISPL.
(tonnes) | LCB
(m) | TCB
(m) | VCB
(m) | WPA
(m ²) | LCF
(m) | TCF
(m) | KMT
(m) | KML
(m) |
|--------------|--------------------|------------|------------|------------|--------------------------|------------|------------|------------|------------|
| 18.94 | 51820.4 | -0.72 | -0.02 | 7.92 | 1485.1 | -0.04 | -0.04 | 27.30 | 27.80 |

Stability Properties of Unit

| | | |
|--|---|-------------|
| Longitudinal Free Surface effect | | 11778.6 t-m |
| Transverse Metacentric Radius | $BM_T = KM_T - VCB$ | 19.38 m |
| Longitudinal Metacentric Radius | $BM_L = KM_L - VCB$ | 19.88 m |
| GM _{fluid} from Inclining Test (with wind correction) | | 6.87 m |
| Layer Correction | from Displacement Calculation (t) | 0.00 m |
| Mean Tangent at Start of Test | Tang | -1.66E-04 |
| Corrected BM _L | $BM_{L\ fluid} = BM_{L\ solid} - FS/\Delta$ | 19.65 m |
| VCG from VCB | $BG = BM_{L\ fluid} - GM_{fluid}$ | 12.78 m |

Centre of Gravity from Inclining Test

| | | |
|--------------------------------|--|------------------|
| Vertical Centre of Gravity | $VCG = VCB + BG$ | 20.70 m from USK |
| Longitudinal Centre of Gravity | $LCG = LCB + [(KM_L - BG) \times t]$ | -0.72 m from ⊗ |
| TCG from cl | $TCG = TCB + Tang \times ((BMT - FS/\Delta) - BG)$ | -0.02 m from CL |

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