

Latin American Forum 23 November 2017



StandardPandl in The Standard P&I Club www.standard-club.com





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Introduction to The Standard Club

A leading International Group P&I club, established in 1884 and now insuring over 10% of global shipping across all major markets.

Industry-leading service, a track record of financial security, and a selective, conservative approach to growth.

2017: overall underwriting profit for the financial year, continued growth of The Standard Syndicate and the Singapore War Risks Mutual.

A broad range of P&I and other marine and energy covers, offering sustained excellent value to high-quality operators.



Overview of the club: key financials Selective growth; breakeven underwriting; strong balance sheet





Membership Diverse spread of business by country of management and ship type





Standard

Club



Track record of flexibility and innovation



*Not supported by the International Group, but resulted in a competitive new entrant to this market "Owners could save close to \$40m each year if International Group clubs support [Standard's] move and guarantee US COFRs" – Tradewinds, January 2014





Meeting members' insurance needs

P&I	War & defence	Non-P&I liabilities*	Assets*	Specialist risks*
 Mutual owned pooled Fixed premium owned Fixed premium charterers Offshore drilling and production Tailored extensions 	 War risks Defence (FD&D) 	 Liability D&O E&O 	 Hull & machinery Cargo Fine Art & Specie Property 	 Energy Political Violence Political Risk
Standard Club	k	Standard Syndicate		

Club service teams in key hubs Supported by Charles Taylor's global network









SALVAGE FORUM 2017 – SMIT SALVAGE

DOUGLAS MARTIN

STANDARD CLUB - SALVAGE FORUM

RIO DE JANEIRO, BRAZIL

23 NOVEMBER, 2017



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01 SHALLOW WATER CABLE LAYING VIDEO

02 SINKING SCENARIO – PAINTING THE PICTURE



CABLE LAYING INTRODUCTION







THE SCENARIO

- CABLE LAYER NAVIGATING GUANABARA BAY IS IN SHALLOW WATER.
- ONCE ON SITE IT COMMENCES CABLE LAYING.
- STEERING GEAR FAILURE, PUTS IT
 OFF COURSE AND IT COLLIDES
 WITH SUBMERGED OF ECT.
 TAKES ON WATER AND SINKE IN
 SHALLOW WATER.
- DAMAGES PRE-EXISTING CABLES AND CABLE BEING LAID.

***PICTURE IS REPRESENTATIVE OF SITUATION (NOT A CABLE SHIP SHOWN)**



POWER CABLE LAYING FROM NITEROI



SUBMERGED OBJECT CONTACT AND SINKING LOCATION – NITEROI



CABLE LAYER MADE CONTACT WITH SUBMERGED OBJECT WHILE

THE CABLE BEING EAID IS DAMAGED

CABLE LAYING VESSEL SUFFERS BREACHED HULL, THERE IS WATER INGRESS

PRE-EXISTING CABLE DAMAGED

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VESSEL PARTICULARS

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Signal Letters SBVH3 Block Coefficient 0.844 at Summer Load Draught IMO Number 9632466 Minimum Forward Draught 2.75 m moulded Flag Cyprus Limassol Lightship Weight 4540 tonnes Port Of Registry Limassol Lift Ship Weight 4540 tonnes Classification LRS #100A1, Offshore Multifunctional Accommodation Barge, Bottom Strengthened for Loading and Unloading Aground, Shipright ACS, *IWS, EP, WDL (15 tonnes/m² from Aft to Frame 136), #LMC, UMS, DP(AA), NAV1 Deadweight 7746.716 tonnes Date of Keel Laying 29" February 2012 Tonnages Gross 7417 Net Yard Number ZPMC-1040 99.00 m Length B.P. 98.31 m Breadth Moulded 90.00 m Breadth Moulded S0.00 m Breadth Moulded S0.00 m Breadth Moulded	Ship Type	Self-propelled DP2 multifunctional accomm with cable laying capability	modation vessel	Summer Load Draught		ded derside of keel plate at midships at Summer Load Draught
IMO Number 9632466 Minimum Forward Draught 2.75 m moulded Flag Cyprus Lightship Weight 4540 tonnes Port Of Registry Limassol Lightship Weight 4540 tonnes Classification LRS ±100A1, Offshore Multifunctional Accommodation Barge, Bottom Strengthened for Loading and Unloading Aground, Shipright ACS, *IWS, EP, WDL (15 tonnes/m² from Aft to Frame 136), #LMC, UMS, DP(AA), NAV1 Deadweight 7746.716 tonnes Date of Keel Laying 29" February 2012 Tonnages Gross 7417 Net 2225 Yard Number ZPMC-1040 99.00 m Length B.P. 98.31 m Breadth Moulded 30.00 m Depth Moulded to main deck 7.00 m Sector		, , , , ,		Displacement	1220/ 10111105	at summer coad braught
Flag Cyprus Lightship Weight 4540 tonnes Port Of Registry Limassol LGG 56.550 m Classification LRS & 100A1, Offshore Multifunctional Accommodation Barge, Bottom Strengthened for Loading and Unloading Aground, Shipright ACS, *IWS, EP, WDL (15 tonnes/m² from Aft to Frame 136), @LMC, UMS, DP(AA), NAV1 Deadweight 7746.716 tonnes Date of Keel Laying 29" February 2012 Tonnages Gross 7417 Net Vard Number ZPMC-1040 99.00 m Length D.A. 99.00 m Dimensions Length O.A. 99.00 m Statum Dimensions Length O.A. 99.00 m Length Moulded	Signal Letters	5BVH3		Block Coefficient	0.844 at Sumr	mer Load Draught
Imag Cypins LCG 56.550 m TCG Port Of Registry Limassol TCG -0.116 m VCG Classification LRS § 100A1, Offshore Multifunctional Accommodation Barge, Bottom Strengthened for Loading and Unloading Aground, Shipright ACS, *IWS, EP, WDL (15 tonnes/m ² from Aft to Frame 136), @LMC, UMS, DP(AA), NAV1 Deadweight 7746.716 tonnes Date of Keel Laying 29" February 2012 Tonnages Gross 7417 Net Yard Number ZPMC-1040 Ength O.A. 99.00 m Length B.P. 98.31 m Breadth Moulded Dimensions Length O.A. 99.00 m Length Moulded to main deck 7.00 m Tonnages	IMO Number	9632466		Minimum Forward Draught	2.75 m mould	ed
Port Of Registry Limassol VCG 6.491 m Classification LRS #100A1, Offshore Multifunctional Accommodation Barge, Bottom Strengthened for Loading and Unloading Aground, Shipright ACS, *IWS, EP, WDL (15 tonnes/m ² from Aft to Frame 136), #LMC, UMS, DP(AA), NAV1 Deadweight 7746.716 tonnes Date of Keel Laying 29" February 2012 Tonnages Gross 7417 Net Yard Number ZPMC-1040 Length O.A. 99.00 m Length B.P. 98.31 m Breadth Moulded Dimensions Length Moulded 30.00 m Depth Moulded to main deck 7.00 m Tonnages	Flag	Cyprus		Lightship		
Barge, Bottom Strengthened for Loading and Unloading Aground, Shipright ACS, *IWS, EP, WDL (15 tonnes/m ² from Aft to Frame 136), #LMC, UMS, DP(AA), NAV1 Tonnages Gross 7417 Net Date of Keel Laying 29" February 2012 Yard Number ZPMC-1040 Dimensions Length 0.A. 99.00 m Length B.P. Barge, Bottom Strengthened for Loading and Unloading Aground, Shipright ACS, *IWS, EP, WDL (15 tonnes/m ²) Tonnages Gross 7417 Net 2225	Port Of Registry	Limassol				
from Aft to Frame 136), ⊕LMC, UMS, DP(AA), NAV1 Net 2225 Date of Keel Laying 29" February 2012 29" February 2012 Yard Number ZPMC-1040 2200 m Dimensions Length O.A. 99.00 m Length B.P. 98.31 m Breadth Moulded 30.00 m Depth Moulded to main deck 7.00 m 1000 m	Classification			Deadweight	7746.716 ton	nes
Yard Number ZPMC-1040 Dimensions Length O.A. 99.00 m Length B.P. Breadth Moulded 30.00 m Depth Moulded to main deck 7.00 m				Tonnages		
Dimensions Length O.A. 99.00 m Length B.P. 98.31 m Breadth Moulded 30.00 m Depth Moulded to main deck 7.00 m	Date of Keel Laying	29" February 2012				
Length B.P. 98.31 m Breadth Moulded 30.00 m Depth Moulded to main deck 7.00 m	Yard Number	ZPMC-1040				
	Dimensions	Length B.P. 98.31 m Breadth Moulded 30.00 m Depth Moulded to main deck 7.00 m				

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GENERAL ARRANGEMENT



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LOAD CONDITION PRIOR TO SINKING EXAMPLE OF CRITICAL INFORMATION



9.12 LC6M - CABLE LAYING FULL LOAD MID VOYAGE

9.12.1 Condition

Ham Name Quantity Mass Volume Arm Arm FM FM<			Total	Total	Long.	Trans.	Vert.	Total	1
Lightship 1 454.0000 56.550 -0.116 6.491 0.000 Water Balast	Item Name	Quantity	Mass	Volume		Arm	Am	FSM	FSM Type
Total Lightship 4540.000 56.550 -0.116 6.491 0.000 Water Balaxt 0 0 0.000 0.200 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 Maximum 01 WB Wing 245-185 P 0% 0.000 0.000 54.583 9.402 0.000 0.000 Maximum 17 WB Wing 254-125 P 0% 0.000 0.000 11.327 0.000 0.000 Maximum 19 WB Wing 254-125 C 0% 0.000 0.000 11.327 0.000 0.000 Maximum 19 WB Wing 254-25 C 0% 0.000 0.000 11.227 0.000 Maximum 19 WB Wing 254-85 C 0% 0.000 0.000 11.227 0.000 Maximum 19 WB Wing 254-87 D 20% 8.8.91 86.723 22.160 11.313 0.000 Maximum 19 WB Wing 254-87 D 20% 8.8.91 86.723 22.161 11.425			tonne	m^3	m	m	m	tonne.m	
Number Particip Particip Particip Particip Particip Particip 01 Wire Balant 01 01 01 01 01 01 00 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 Maximum 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 Maximum 0.000 0.000 0.000 0.000 Maximum 0.000 0.000 0.000 Maximum 0.000 0.000 Maximum 0.000	Lightship	1	4540.000		\$6.550	-0.116	6.491	0.000	
01 FP WB 185-FI 0% 0.000 0.000 4.533 -9.402 0.000 Maximum 03 WB Wing 258-185 5 0% 0.000 0.000 4.543 -9.402 0.000 0.000 Maximum 17 WB Wing 264-128 P 0% 0.000 0.000 55.000 -11.127 0.000 0.000 Maximum 19 WB Wing 264-128 P 0% 0.000 0.000 1.1327 0.000 0.000 Maximum 19 WB Wing 26-84 P 0% 0.000 0.000 46.000 1.1327 0.000 0.000 Maximum 19 WB Wing 26-84 P 0% 0.000 0.000 44.000 -11.1327 0.000 Maximum 21 WB Wing 26-85 0% 0.000 0.000 9.70 0.000 1.332 0.000 Maximum 23 WB Wing 26-86 P 20% 84.372 22.166 11.811 0.750 321.586 Maximum 23 WB Wing 26-86 P 20% 84.020 0.000 0.000 1.332 0.000 Maximum <th>Total Lightship</th> <th></th> <th>4540.000</th> <th></th> <th>\$6.550</th> <th>-0.116</th> <th>6.491</th> <th>0.000</th> <th></th>	Total Lightship		4540.000		\$6.550	-0.116	6.491	0.000	
01 FP WB 185-FI 0% 0.000 0.000 4.533 -9.402 0.000 Maximum 03 WB Wing 258-185 5 0% 0.000 0.000 4.543 -9.402 0.000 0.000 Maximum 17 WB Wing 264-128 P 0% 0.000 0.000 55.000 -11.127 0.000 0.000 Maximum 19 WB Wing 264-128 P 0% 0.000 0.000 1.1327 0.000 0.000 Maximum 19 WB Wing 26-84 P 0% 0.000 0.000 46.000 1.1327 0.000 0.000 Maximum 19 WB Wing 26-84 P 0% 0.000 0.000 44.000 -11.1327 0.000 Maximum 21 WB Wing 26-85 0% 0.000 0.000 9.70 0.000 1.332 0.000 Maximum 23 WB Wing 26-86 P 20% 84.372 22.166 11.811 0.750 321.586 Maximum 23 WB Wing 26-86 P 20% 84.020 0.000 0.000 1.332 0.000 Maximum <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>									
OS WB Wing 288-185 P O% 0.000 0.4438 -9.402 0.000 0.000 Maximum 03 WB Wing 284-185 S O% 0.000 0.000 84.583 9.402 0.000 0.000 Maximum 17 WB Wing 244-128 S O% 0.000 0.000 58.000 -11.127 0.000 0.000 Maximum 19 WB Wing 24-04 P O% 0.000 0.000 44.000 -11.127 0.000 0.000 Maximum 19 WB Wing 24-04 P O% 0.000 0.000 44.000 -11.127 0.000 0.000 Maximum 21 WB Wing 24-04 P O% 0.000 0.000 44.000 -11.127 0.000 0.000 Maximum 21 WB Wing 24-64 P O% 0.000 0.000 1.1327 0.000 0.000 Maximum 21 WB Wing 24-64 P O% 0.000 0.000 1.1321 0.100 Maximum 21 WB Wing 24-65 P 20% 88.93 86.723 22.162 0.1300 0.000 Maximum	Water Ballast								
OS Way Ung 288-185 5 O% 0.000 84.583 9.402 0.000 Mouth man mathematical stress of the s	01 FP WB 185-FE	0%	0.000	0.000	92.977	0.000	0.000	0.000	Maximum
17 WB Wing 204-128 P 0% 0.000 54.000 -11.327 0.000 Maximum 17 WB Wing 204-128 5 0% 0.000 54.000 11.327 0.000 0.000 Maximum 19 WB Wing 20-549 P 0% 0.000 0.000 46.000 -11.327 0.000 0.000 Maximum 19 WB Wing 20-545 F 0% 0.000 0.000 46.000 -11.327 0.000 0.000 Maximum 23 WB Wing 20-56 F 20% 84.372 18.2144 22.140 -11.829 0.700 Maximum 23 WB Wing 20-56 S 20% 84.372 182.314 22.162 0.130 0.000 Maximum 24 WB 8A-20 C 0% 0.000 0.000 9.70 0.000 1.300 0.000 Maximum 7br Ware	03 W8 Wing 198-185 P	0%	0.000	0.000	84.583	-9.402	0.000	0.000	Maximum
17 WB Wing 204-128 5 0% 0.000 54.000 11.127 0.000 0.000 Maximum 19 WB Wing 30-545 6 0% 0.000 0.000 40.000 11.127 0.000 0.000 Maximum 21 WB Wing 50-545 6 0% 0.000 0.000 14.000 11.127 0.000 0.000 Maximum 21 WB Wing 50-56 F 0% 0.000 0.000 1.1327 0.000 0.000 Maximum 24 AP WB A2-56 F 20% 45.723 22.140 -11.1321 0.000 Maximum 24 AP WB A2-56 F 20% 45.723 22.162 0.310 0.750 45.1371 24 AP WB A2-56 F 0% 0.000 0.000 79.000 -6.000 1.300 0.000 Maximum 24 AP WB A2-56 F 0% 0.000 0.000 79.000 -6.000 1.300 0.000 Maximum 05 FW 144-548 F 0% 0.000 0.000 79.000 -6.001 1.300 0.000 Maximum 7 FW	03 W0 Wing 198-185 5	0%	0.000	0.000	84.583	9.402	0.000	0.000	Maximum
19 WB Wing 80-104 P 0% 0.000 0.000 46.000 -11.327 0.000 0.000 Maximum 19 WB Wing 80-104 S 0% 0.000 0.000 11.327 0.000 0.000 Maximum 21 WB Wing 54-80 P 0% 0.000 0.000 34.000 -11.327 0.000 0.000 Maximum 21 WB Wing 20-54 P 20% 84.372 82.314 22.406 11.811 0.700 21.566 Maximum 24 AP WB AL-20 C 0% 0.000 0.000 9.972 0.000 1.332 0.000 Maximum 7tesl Water Salaut 3.55N 172.123 166.037 22.166 1.310 0.000 Maximum 06 FW 145-168 P 0% 0.000 0.000 79.000 6.100 1.300 0.000 Maximum 07 FW Wing 145-168 P 0% 0.000 0.000 79.000 1.300 0.000 Maximum 07 FW Wing 145-168 P 0% 0.2121 11.977 79.500 11.473 0.417	17 W8 Wing 104-128 P	0%	0.000	0.000	58.000	-11.327	0.000	0.000	Maximum
19 Wing 86-304 5 0% 0.000 46.000 11.327 0.000 0.000 Maximum 11 WW Wing 54-80 P 0% 0.000 0.000 1.3127 0.000 0.000 Maximum 21 WW Wing 54-80 S 0% 0.000 0.000 1.3127 0.000 0.000 Maximum 23 WW Wing 26-54 S 20% 84.372 82.314 22.140 -11.829 0.720 321.586 Maximum 23 WW Wing 26-54 S 20% 84.372 82.314 22.162 0.1131 0.750 Maximum 24 WW 84-70 C 0% 0.000 0.000 9.72 0.000 1.300 0.000 Maximum 764 Water	17 W8 Wing 104-128 5	0%	0.000	0.000	58.000	11.327	0.000	0.000	Maximum
21 WB Wing 56-80 P 0% 0.000 0.000 34.000 -11.127 0.000 0.000 Maximum 21 WB Wing 26-80 S 0% 0.000 0.000 11.127 0.000 0.000 Maximum 21 WB Wing 26-85 P 20% MB.372 12.134 11.127 0.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.0132 Moximum 21 A9 WBR 26-05 20% 48.871 66.723 22.162 0.010 1.312 0.000 Maximum 21 A9 WBR 26-05 0.000 0.000 79.000 -6.000 1.300 0.000 Maximum 7 INW Wing 146-168 0% 0.000 0.000 79.000 -6.000 1.300 0.000 Maximum 05 FW 148-168 0% 0.000 0.000 79.000 6.000 1.000 0.000 Maximum 17 WW Wing 146-168 10% 37.772 37.372 78.463 -11.473 0.417 165.411 Maximum	19 W8 Wing 80-104 P	0%	0.000	0.000	46.000	-11.327	0.000	0.000	Maximum
11 WB Wing 35-80 5 0% 0.000 1.000 34.000 11.327 0.000 0.000 Maximum 23 WB Wing 25-85 P 20% 84.372 82.314 22.140 -11.8129 0.720 321.586 Maximum 24 AP WB At-20 C 0% 0.000 0.000 9.972 0.000 1.332 0.000 Maximum 24 AP WB At-20 C 0% 0.000 0.000 9.972 0.000 1.332 0.000 Maximum Tetal Water Balant 3.55% 173.263 166.027 22.162 0.310 0.755 643.371 Final Ab-568 0% 0.000 0.000 79.000 6.000 1.300 0.000 Maximum 05 Fiv 148-568 0% 0.000 0.000 79.000 6.000 1.300 0.000 Maximum 07 Fiv Wing 148-168 5 10% 17.772 37.772 7.756.00 1.1473 0.427 165.411 Maximum 12t F0 Sett 124-128 F 75% 50.121 11.907 61.000	19 WB Wing 80-104 S	0%	0.000	0.000	46.000	11.327	0.000	0.000	Maximum
23 WB Wing 28-56 P 20% 84.372 82.314 22.140 -11.829 0.720 321.586 Maximum 23 WB Wing 29-54 S 20% 88.891 86.723 32.066 11.811 0.750 321.586 Maximum 24 WB RA-DC 0% 0.000 0.000 9.77 0.000 1.332 0.000 Maximum Total Water Ballast 3.55% 173.263 169.037 22.162 0.310 0.725 643.171 Freek Water 0 0 0.000 78.000 6.000 1.300 0.000 Maximum 06 FW 146-568 P 0% 0.000 0.000 78.000 4.500 1.300 0.000 Maximum 07 FW Wing 146-568 P 5% 22.651 22.653 11.473 0.417 165.611 Maximum 126 For Whing 146-568 P 5% 22.661 2.812 1.327 30.822 7 FW Wing 146-568 P 5% 2.0121 11.907 61.000 4.500 2.312 3.825 Max	21 W8 Wing 56-80 P	0%	0.000	0.000	34.000	-11.327	0.000	0.000	Maximum
23 W8 Weig 28-56 5 20% 88.891 86.723 22.026 11.811 0.750 321.586 Maximum 24 AP W14 A-20 C 0% 0.000 0.000 9.972 0.000 1.322 0.000 Maximum 714 W14 A-20 C 0% 0.000 1.972 0.000 0.735 643.171 Maximum 714 W14 A-20 C 0.55 157.263 126.807 22.182 0.310 0.735 643.171 714 W14 A-20 C 0.500 0.000 79.000 -6.000 1.300 0.000 Maximum 06 FW 148-584 P 0% 0.000 0.000 79.000 -6.000 1.300 0.000 Maximum 07 FW Wing 148-168 P 0% 0.000 79.000 -11.473 0.437 30.822 71W Wing 148-168 P 0% 20.121 11.907 61.000 4.500 2.312 3.825 Maximum 124 OS ett 124-128 F 75% 20.121 11.907 61.000 7.500 2.312 3.825 Max	21 W0 Wing 56-80 S	0%	0.000	0.000	34.000	11.327	0.000	0.000	Maximum
24 AP WB At-20 C 0% 0.000 9.972 0.000 1.332 0.000 Maximum Total Water Balant 3.55% 173.263 166.037 22.162 0.310 0.755 643.371 Frank Water 0 173.263 166.037 22.162 0.310 0.755 643.371 Frank Water 0 0 0.000 7.000 6.000 1.300 0.000 Maximum 06 FW 148-168 F 0% 0.000 0.000 7.900 6.000 1.300 0.000 Maximum 07 FW Wing 148-168 F 0% 0.226 3.22.663 78.465 -11.379 0.258 185.411 Maximum 07 FW Wing 148-168 F 10% 37.772 78.500 11.473 0.417 105.411 Maximum Tetal Fresh Water 5.98% 60.435 78.465 2.896 0.357 30.822 Fuel OB - - - - 10.01 11.507 63.000 7.000 2.312 3.825 Maximum	23 W8 Wing 20-56 P	20%	\$4.372	82.314	22.140	-11.829	0.720	321.586	Maximum
Total Water Balant 3.55% 273.263 169.037 22.102 0.310 0.725 643.171 reak Water - <th>23 W8 Wing 20-56 S</th> <th>20%</th> <th>88.891</th> <th>86.723</th> <th>22.066</th> <th>11.831</th> <th>0.750</th> <th>321.586</th> <th>Maximum</th>	23 W8 Wing 20-56 S	20%	88.891	86.723	22.066	11.831	0.750	321.586	Maximum
Freek Water C <thc< th=""> C <thc< th=""> <thc< th=""> <thc< th=""> <thc< t<="" th=""><th>24 AP WE AE-20 C</th><th>0%</th><th>0.000</th><th>0.000</th><th>9.972</th><th>0.000</th><th>1.332</th><th>0.000</th><th>Maximum</th></thc<></thc<></thc<></thc<></thc<>	24 AP WE AE-20 C	0%	0.000	0.000	9.972	0.000	1.332	0.000	Maximum
06 FW 148-168 P 0% 0.000 0.000 79.000 -6.000 1.300 0.000 Maximum 06 FW 148-168 P 0% 0.000 79.000 6.000 1.300 0.000 Maximum 07 FW Wing 148-168 P 6% 22.663 72.463 -1.1300 0.200 Maximum 07 FW Wing 148-168 S 10% 37.772 37.772 78.550 11.473 0.417 125.411 Maximum Total Freek Water 5.88% 60.435 74.446 2.896 0.357 330.822 Fuel OII -	Total Water Ballant	3.55%	173.263	159.037	22.102	0.310	0.735	643.171	
06 FW 148-168 P 0% 0.000 0.000 79.000 -6.000 1.300 0.000 Maximum 06 FW 148-168 P 0% 0.000 79.000 6.000 1.300 0.000 Maximum 07 FW Wing 148-168 P 6% 22.663 72.463 -1.1300 0.200 Maximum 07 FW Wing 148-168 S 10% 37.772 37.772 78.550 11.473 0.417 125.411 Maximum Total Freek Water 5.88% 60.435 74.446 2.896 0.357 330.822 Fuel OII -									
OS FW 148-168 5 O% 0.000 0.000 79.000 6.000 1.300 0.000 Maximum OT FW Wing 148-168 F 0% 22.663 22.663 72.463 -11.399 0.258 125.411 Maximum OT FW Wing 148-168 F 10% 37.772 37.772 77.750 137.73 0.417 126.411 Maximum Total Fresh Water 5.38% 60.435 60.435 78.486 2.896 0.357 330.822 Ted OI - <th>Fresh Water</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	Fresh Water								
Of FW Wing 148-168 P 6% 22.663 78.463 -11.399 0.258 185.411 Maximum Of FW Wing 148-168 S 10% 37.772 37.772 78.500 11.473 0.417 165.411 Maximum Teal Fresh Water 5.98% 60.435 78.485 2.896 0.357 330.822 Fuel OI 60.435 78.485 2.896 0.357 330.822 Fuel OI 60.435 78.485 2.896 0.357 330.822 Fuel OI 60.435 78.485 2.896 0.357 330.822 14 FO Sett 124-128 75% 10.121 11.907 63.000 4.500 2.312 3.825 Maximum 15 FO Baly Service 124-128 75% 10.121 11.907 63.000 7.500 2.312 3.825 Maximum 15 FO Baly Service 124-128 75% 10.211 11.907 63.000 7.500 2.312 3.825 Maximum 15 FO Baly Service 124-128 0.500 0.000 1.300 0.000	06 FW 148-168 P	0%	0.000	0.000	79.000	-6.000	1.300	0.000	Maximum
Of FW Wing 148-168 5 10% 37.772 37.372 78.500 11.473 0.417 185.411 Maximum Total Freeh Water 5.38% 60.435 60.435 78.486 2.996 0.357 330.822 Fael OB 64.435 78.486 2.996 0.357 330.822 147 O Sett 124-128 75% 50.121 11.907 63.000 4.500 2.312 3.825 Maximum 147 O Sett 124-128 75% 50.121 11.907 63.000 4.500 2.312 3.825 Maximum 157 O Daly Service 324-128 75% 50.121 11.907 63.000 7.500 2.312 3.825 Maximum 157 O Daly Service 324-128 75% 50.211 11.907 63.000 1.300 0.000 Maximum 157 O Daly Service 324-128 75% 50.211 1.917 1.916 0.000 Maximum 15 00 61.04 C 0% 0.000 0.000 3.974 -0.016 1.300 0.000 Maxi	06 FW 148-168 S	0%	0.000	0.000	79.000	6.000	1.300	0.000	Maximum
Total Freeh Water 5.98% 60.435 60.435 78.486 2.986 0.357 330.822 14 F0 Sett 124-128 P 75% 50.121 11.907 61.000 4.500 2.312 3.825 Maximum 14 F0 Sett 124-128 P 75% 50.121 11.907 61.000 4.500 2.312 3.825 Maximum 15 F0 Dayls-ext 24-128 P 75% 50.121 11.907 61.000 -7.500 2.312 3.825 Maximum 15 F0 Dayls-ext 24-128 P 75% 50.121 11.907 61.000 -7.500 2.312 3.825 Maximum 15 F0 Dayls-ext 24-128 P 75% 50.212 11.907 61.000 -7.500 2.312 3.825 Maximum 15 F0 Dayls-ext 24-128 P 75% 50.012 11.907 61.000 -7.500 2.312 3.825 Maximum 15 F0 Dayls-ext 24-128 P 75% 0.000 0.000 3.974 -0.016 1.300 0.000 Maximum 15 F0 Dayls-ext 24-128 77.202 326.19 <th>07 FW Wing 148-168 P</th> <th>6%</th> <th>22.663</th> <th>22.663</th> <th>78.463</th> <th>-11.399</th> <th>0.258</th> <th>165.411</th> <th>Maximum</th>	07 FW Wing 148-168 P	6%	22.663	22.663	78.463	-11.399	0.258	165.411	Maximum
Image: Control of the second state of the s	07 FW Wing 148-168 S	10%	37.772	37.772	78.500	11.473	0.417	165.411	Maximum
14 FO Sett 124-128 P 75% 50.121 11.907 61.000 4.500 2.312 3.825 Maximum 14 FO Sett 124-128 F 75% 50.121 11.907 61.000 4.500 2.312 3.825 Maximum 15 FO Jalys Avera 124-128 F 75% 50.121 11.907 61.000 -7.500 2.312 3.825 Maximum 15 FO Jalys Avera 124-128 F 75% 50.2121 11.907 61.000 -7.500 2.312 3.825 Maximum 15 FO Jaly Service 124-128 F 75% 0.000 0.000 1.500 -7.500 2.312 3.825 Maximum 15 FO Jaly Service 124-128 F 75% 0.000 0.000 1.500 -0.000 Maximum 15 FO Jaly Service 124-128 F 75% 0.000 0.000 1.500 0.000 Maximum 12 FO SE40C 0% 0.000 0.000 1.507 4.517 0.000 Maximum 12 FO SE40C 0% 1.447 277.202 126.119 2.751 0.000 <	Total Fresh Water	5.98%	60.435	60.435	78,486	2,896	0.157	330.622	
14 FO Sett 124-128 P 75% 50.121 11.907 61.000 4.500 2.312 3.825 Maximum 14 FO Sett 124-128 F 75% 50.121 11.907 61.000 4.500 2.312 3.825 Maximum 15 FO Jalys Avera 124-128 F 75% 50.121 11.907 61.000 -7.500 2.312 3.825 Maximum 15 FO Jalys Avera 124-128 F 75% 50.2121 11.907 61.000 -7.500 2.312 3.825 Maximum 15 FO Jaly Service 124-128 F 75% 0.000 0.000 1.500 -7.500 2.312 3.825 Maximum 15 FO Jaly Service 124-128 F 75% 0.000 0.000 1.500 -0.000 Maximum 15 FO Jaly Service 124-128 F 75% 0.000 0.000 1.500 0.000 Maximum 12 FO SE40C 0% 0.000 0.000 1.507 4.517 0.000 Maximum 12 FO SE40C 0% 1.447 277.202 126.119 2.751 0.000 <									
14 F0 Sett 124-128 5 75% 20.121 11.907 6.1.000 4.500 2.312 3.825 Maximum 15 F0 Daily-Service 124-128 5 75% 30.121 11.907 63.000 7.500 2.312 3.825 Maximum 15 F0 Daily-Service 124-128 5 75% 30.121 11.907 63.000 7.500 2.312 3.825 Maximum 15 F0 Daily-Service 124-128 C 0% 0.000 0.000 57.379 0.000 1.300 0.000 Maximum 18 F0 Bol-04 C 0% 0.000 0.000 45.005 -0.016 1.300 0.000 Maximum 18 F0 Bol-04 C 0% 0.000 0.000 3.974 -0.016 1.300 0.000 Maximum 20 F0 56-60 C 50% 236.718 278.491 21.914 0.000 1.975 4865.259 Maximum Total fuel Of 14.422 277.202 326.118 27.914 0.000 1.975 0.204 Maximum 10 abord Store 216-129 F 50% 1.88	Fuel Oil								
15 F0 Daily Service 124-128 5 75% 30.121 11.907 63.000 7.500 2.312 3.825 Maximum 15 F0 Daily Service 124-128 F 75% 30.121 11.907 63.000 -7.300 2.312 3.825 Maximum 15 F0 Daily Service 124-128 F 75% 30.121 11.907 63.000 -7.300 2.312 3.825 Maximum 15 F0 Dib-126 C 0% 0.000 0.000 46.005 -0.016 1.300 0.000 Maximum 20 F0 25-60 C 0% 0.000 0.000 1.914 0.000 1.975 Maximum 20 F0 25-60 C 0% 0.000 1.914 0.008 1.975 Maximum 12 F0 32-64 C 0% 2.024 4895.539 Maximum Total Pael Oil 14.42% 277.202 326.119 2.7914 0.068 2.024 4895.539 Lubricating Oil 13.426 OI Store 124-129 F 50% 1.887 2.051 64.310 10.750 1.975 0.741 Maximum	14 FO Sett 124-128 P	75%	10.121	11.907	63.000	-4.500	2.312	3.825	Maximum
15 FO Daily Service 124-128 P 75% 20121 11.907 61.000 -7.500 2.312 3.825 Maximum 16 F0 Dialy Service 124-128 P 0% 0.000 57.339 0.000 1.300 0.000 Maximum 16 F0 Dialy C 0% 0.000 0.000 4.005 -0.015 1.300 0.000 Maximum 18 F0 Dialy C 0% 0.000 0.000 31.974 -0.016 1.300 0.000 Maximum 28 F0 S6-60 C 0% 0.000 0.000 31.974 -0.016 1.300 0.000 Maximum 28 F0 S6-60 C 0% 2.02.18 27.844 0.068 2.024 4880.539 Maximum Total Fuel Oil 14.42% 277.202 32.6119 2.7914 0.060 1.975 0.743 Maximum 13 Lub Of Store 128-129 P 50% 1.887 2.051 64.310 1.0.750 1.753 0.743 Maximum 15 Lub Of Store 128-129 P 50% 0.453 0.490 5.000 <t< th=""><th>14 FO Sett 124-128 S</th><th>75%</th><th>10.121</th><th>11.907</th><th>63.000</th><th>4.500</th><th>2.312</th><th>3.825</th><th>Maximum</th></t<>	14 FO Sett 124-128 S	75%	10.121	11.907	63.000	4.500	2.312	3.825	Maximum
15 FO 104-128 C 0% 0.000 0.000 57.379 0.000 1.300 0.000 Maximum 18 FO 86-104 C 0% 0.000 40.005 -0.016 1.300 0.000 Maximum 18 FO 86-104 C 0% 0.000 0.000 46.026 -0.016 1.300 0.000 Maximum 22 FO 52-60 C 0% 0.000 0.000 3.974 -0.016 1.300 0.000 Maximum Total Fuel OI 14.42X 277.202 326.119 27.914 0.000 1.975 4855.259 Maximum Labricating OI 1.42X 277.202 326.119 27.914 0.001 1.975 0.743 Maximum 13 Lub OI Store 121-129 50% 1.487 2.051 64.310 10.750 1.975 0.743 Maximum 13 Lub OI Store 121-129 50% 0.451 0.440 5.000 -10.500 7.250 0.077 Maximum 13 Lub OI Store 121-129 50% 0.451 0.440 5.000	15 FO Daily Service 124-128 S	75%	10.121	11.907	63.000	7.500	2.312	3.825	Maximum
18 FO 80-104 C 0% 0.000 0.000 46.026 -0.016 1.300 0.000 Maximum 20 FO 56-0C 0% 0.000 0.000 31.974 -0.016 1.300 0.000 Maximum 22 FO 33-56 C 50% 226.718 278.491 21.914 -0.001 1.975 4865.239 Maximum 22 FO 33-56 C 50% 226.718 278.491 21.914 0.008 2.024 4865.239 Maximum Total Fuel Od 1.442% 277.202 22.611 64.310 -0.026 2.024 4865.539 Labtcating Ol 4865.539 Maximum 13 lub Ol Store 128-129 F 50% 1.867 2.051 64.310 -30.750 1.975 0.743 Maximum 35 lub Ol F 50% 0.451 0.400 5.000 1.5075 1.077 Maximum Total lub/coting Oli 50% 4.455 5.081 52.871 0.000 2.992 1.639	15 FO Daily Service 124-128 P	75%	10.121	11.907	63.000	-7.500	2.312	3.825	Maximum
28 F0 56-80 C 0% 0.000 0.000 31.974 -0.016 1.300 0.000 Maximum 22 F0 32-86 C 50% 236.718 278.491 21.914 0.000 1.975 4865.539 Maximum Total Paul Oil 14.42% 277.202 326.119 27.914 0.060 1.075 4865.539 Maximum Lubricsting Oil 14.42% 277.202 326.119 27.914 0.060 2.024 4890.559 Lubricsting Oil 14.42% 277.202 326.119 27.914 0.060 1.975 0.743 Maximum 13 Lub Of Store 128-129 50% 1.887 2.051 64.310 -10.750 1.975 0.743 Maximum 15 Lub Of Store 128-129 50% 0.451 0.480 5.000 -20.500 7.250 0.077 Maximum 15 Lub Of Store 128-129 50% 0.451 0.480 5.000 10.000 2.992 1.89 Total Lubricting Oil 50% 4.675 5.081 5.2871	16 FO 104-128 C	0%	0.000	0.000	57.379	0.000	1.300	0.000	Maximum
22 FO 32-56 C 50% 236 718 278.491 21.914 0.080 1.975 4865.259 Maximum Tetal Fuel Oil 14.42% 277.202 326.119 27.914 0.080 1.975 4865.259 Maximum Labricating Oil 77.202 326.119 27.914 0.068 2.024 4880.559 Labricating Oil 7 2.051 64.310 10.750 1.975 0.741 Maximum 13 Lub Oil Stere 216-129 P 50% 1.887 2.051 64.310 10.750 1.975 0.743 Maximum 13 Lub Oil Stere 126-129 F 50% 0.451 0.480 5.000 -10.500 7.250 0.077 Maximum 13 Lub Oil Stere 126-129 F 50% 0.451 0.480 5.000 1.050 7.250 0.077 Maximum 15 Lub Oil Stere 126-126 50% 0.461 0.480 5.000 1.050 7.250 0.077 Maximum 16 Lub Architer 176-185 50% 1.7.861 17.861 9.250 0	18 FO 80-104 C	0%	0.000	0.000	46.026	-0.016	1.300	0.000	Maximum
Total Fuel Oli 14.42% 277.202 326.119 27.914 0.068 2.024 4880.559 Lubrichting Oli -<	20 FO 56-80 C	0%	0.000	0.000	33.974	-0.016	1.300	0.000	Maximum
Lubricating Oil Image: Constraint of the second secon	22 FO 32-56 C	50%	236.718	278.491	21.914	0.080	1.975	4865.259	Maximum
13 Lub Oli Store 128-129 P 50% 1.887 2.051 64.310 -10.750 1.975 0.743 Maximum 13 Lub Oli Store 128-129 S 50% 1.887 2.051 64.310 10.750 1.975 0.743 Maximum 15 Lub Oli Store 128-129 S 50% 0.451 0.490 5.000 -10.500 7.250 0.077 Maximum 15 Lub Oli Store 128-129 S 50% 0.451 0.490 5.000 -10.500 7.250 0.077 Maximum 15 Lub Oli Store 128-129 S 50% 0.451 0.490 5.000 1.550 7.250 0.077 Maximum Total Lubricating Oli 50% 4.457 5.081 52.871 0.000 2.992 1.639 Miscillaneous Tanka 7 0.200 1.638 81.000 Maximum 04 Grey Water 168-176 C 25% 15.875 15.876 86.000 0.000 1.638 81.000 06 Droverflow Model-188 5% 0.451 1.980 0.600 1.638 81.000	Total Fuel Oil	14.42%	277.202	326.119	27.914	0.068	2.024	4880.559	
13 Lub Oli Store 128-129 P 50% 1.887 2.051 64.310 -10.750 1.975 0.743 Maximum 13 Lub Oli Store 128-129 S 50% 1.887 2.051 64.310 10.750 1.975 0.743 Maximum 15 Lub Oli Store 128-129 S 50% 0.451 0.490 5.000 -10.500 7.250 0.077 Maximum 15 Lub Oli Store 128-129 S 50% 0.451 0.490 5.000 -10.500 7.250 0.077 Maximum 15 Lub Oli Store 128-129 S 50% 0.451 0.490 5.000 1.550 7.250 0.077 Maximum Total Lubricating Oli 50% 4.457 5.081 52.871 0.000 2.992 1.639 Miscillaneous Tanka 7 0.200 1.638 81.000 Maximum 04 Grey Water 168-176 C 25% 15.875 15.876 86.000 0.000 1.638 81.000 06 Droverflow Model-188 5% 0.451 1.980 0.600 1.638 81.000									
13 Lub Oli Store 128-129 5 50% 1.887 2.051 64.310 12.0750 1.975 0.743 Maximum 15 Lub Oli P 50% 0.451 0.400 5.000 -20.500 7.250 0.077 Maximum 15 Lub Oli S 50% 0.451 0.400 5.000 -20.500 7.250 0.077 Maximum Total Lubricating Oli 50% 4.457 5.081 52.871 0.000 2.992 1.639 Maximum 60 50% 4.475 5.081 52.871 0.000 2.992 1.639 Maximum 62 Black Water 176-185 C 25% 17.861 17.861 90.250 0.000 1.638 81.000 Maximum 60 Birty Oki 20-22 P 50% 1.877 15.876 65.000 0.000 1.638 72.000 Maximum 60 Dirty Oki 20-22 P 50% 1.821 1.900 10.502 -0.748 1.900 0.259 Maximum 10 Birty Oki 14-548 P 50% 3.185 72.200	Lubricating Oil								
35 Lub Oli P 50% 0.451 0.490 5.000 -20.500 7.250 0.077 Maximum 35 Lub Oli S 50% 0.451 0.490 5.000 10.500 7.250 0.077 Maximum 35 Lub Oli S 50% 0.451 0.490 5.000 10.500 7.250 0.077 Maximum Total Lubricating Oli 50% 4.675 5.081 2.081 0.000 2.992 1.439 Miscellaneous Tanka Maximum 04 Gery Water 136-155 C 25% 17.861 17.810 80.200 0.000 1.638 81.000 Maximum 08 FO Overflow 140-148 P 5% 0.541 0.637 7.220 -3.300 0.012 5.468 Maximum 09 Erry Oli 2-22 P 50% 1.312 1.980 0.529 -3.300 0.163 6.594 Maximum 11 Bige Holding 340-148 P 50% 3.102 7.200 3.000 0.163	13 Lub Oil Store 128-129 P	50%	1.667	2.051	64.310	-10.750	1.975	0.743	Maximum
35 Lab Olf S 50% 0.451 0.490 5.000 12.500 7.250 0.077 Maximum Total Lubricating Oli 50% 4.675 5.081 52.871 0.000 2.922 1.639 Miscellaneous Tanka	13 Lub Oil Store 128-129 5	50%	1.667	2.051	64.310	10.750	1.975	0.743	Maximum
Total Lubricating Oli 50% 4.675 5.081 52.871 0.000 2.992 1.639 Macellaneous Tanks	35 Lub OII P	50%	0.451	0.490	5.000	-10.500	7.250	0.077	Maximum
Niscilianeous Tanka Image: Constraint of the second s	15 Lub OII 5	50%	0.451	0.490	5.000	10.500	7.250	0.077	Maximum
02 Black Water 176-185 C 25% 17.861 17.861 90.250 0.000 1.638 81.000 Maximum 04 Gery Water 186-176 C 25% 55.876 15.676 86.000 0.000 1.638 72.000 Maximum 06 Gery Water 186-176 C 25% 55.876 15.876 86.000 0.000 1.638 72.000 Maximum 06 Drey Water 186-176 C 25% 0.517 72.200 -3.00 0.002 5.468 Maximum 06 Drey Gl 20-22 P 50% 1.821 1.900 10.502 -0.748 1.980 0.259 Maximum 11 Bige Hoking 140-1485 25% 3.125 7.1000 7.200 3.100 0.115 6.594 Maximum 12 Dirty Oil 144-1485 50% 4.668 5.096 7.000 0.125 9.813 Maximum	Total Lubricating Oil	50%	4.675	5.081	\$2,871	0.000	2.992	1.639	
02 Black Water 176-185 C 25% 17.861 17.861 90.250 0.000 1.638 81.000 Maximum 04 Gery Water 186-176 C 25% 55.876 15.676 86.000 0.000 1.638 72.000 Maximum 06 Gery Water 186-176 C 25% 55.876 15.876 86.000 0.000 1.638 72.000 Maximum 06 Drey Water 186-176 C 25% 0.517 72.200 -3.00 0.002 5.468 Maximum 06 Drey Gl 20-22 P 50% 1.821 1.900 10.502 -0.748 1.980 0.259 Maximum 11 Bige Hoking 140-1485 25% 3.125 7.1000 7.200 3.100 0.115 6.594 Maximum 12 Dirty Oil 144-1485 50% 4.668 5.096 7.000 0.125 9.813 Maximum									
OH Grey Water 168-176 C 25% 15.875 15.876 86.000 0.000 1.638 72.000 Maximum 08 FO Overflow 140-148 P 5% 0.541 0.637 72.200 -3.300 0.032 5.468 Maximum 09 Diery 0110-22 P 50% 1.621 1.960 10.592 -0.748 1.960 0.259 Maximum 11 Bige Holding 140-148 F 50% 3.185 72.200 3.300 0.163 6.594 Maximum 12 Diery 0114-148 F 50% 4.688 5.096 73.000 7.000 0.255 9.813 Maximum 12 Diery 0114-148 F 50% 4.688 5.096 73.000 7.000 0.325 9.813 Maximum									
08 PO Overfleer 140-148 P 5% 0.541 0.637 72.200 -3.300 0.032 5.468 Maximum 09 Dirty 012 0-22 P 50% 1.621 1.980 10.502 -0.748 1.980 0.259 Maximum 11 Bige Holding 340-3485 25% 3.265 1.185 72.200 3.300 0.163 6.594 Maximum 12 Dirty 0114-148 P 50% 4.668 5.096 73.000 7.000 0.255 9.813 Maximum 12 Dirty 0114-148 S 50% 4.668 5.096 73.000 7.000 0.325 9.813 Maximum	02 Black Water 176-185 C	25%	17.861	17.861	90.250	0.000	1.638	81.000	Maximum
Op Dirty GI 20-22 P S0N 1.821 1.900 10.502 -0.748 1.980 0.259 Maximum 11 Bige Holding 240-1485 25% 3.125 3.125 7.200 3.000 0.161 6.594 Maximum 12 Dirty OI 144-1485 50% 4.688 5.096 7.000 -7.000 0.125 9.813 Maximum 12 Dirty OI 144-1485 50% 4.688 5.096 73.000 -7.000 0.325 9.813 Maximum							1.638	72.000	Maximum
11 Bilge Holding 140-148 5 25% 3.265 3.185 72.200 3.300 0.163 6.594 Maximum 12 Dirty OI 144-148 P 50% 4.688 5.096 73.000 -7.000 0.325 9.813 Maximum 12 Dirty OI 144-148 5 50% 4.688 5.096 73.000 -7.000 0.325 9.813 Maximum	08 FD Overflow 140-148 P	5%	0.541	0.637	72.200	-3.300	0.032	5.468	Maximum
12 Dirty Oil 144-148 P 50% 4.68 5.096 71.000 -7.000 0.325 9.813 Musimum 12 Dirty Oil 144-148 5 50% 4.688 5.096 73.000 7.000 0.325 9.813 Musimum	09 Dirty Oil 20-22 P	50%	1.821	1.980	10.502	-0.748	1.980	0.259	Maximum
12 Dirty Oil 144-148 5 50% 4.688 5.096 73.000 7.000 0.325 9.833 uce-Medittum	11 Bilge Holding 140-148 S	25%	3.265	3.185	72.200	3.300	0.163	6.594	Maximum
	12 Dirty OI 144-148 P	50%	4.688	5.096	73.000	-7.000	0.325	9.813	Maximum
Total Miscellaneous Tanka 27% 48.740 49.730 81.158 0.156 1.281 184.548	12 Dirty OI 144-148 S	50%	4.688	5.096	73.000	7.000	0.325	9.813	was Meximum
	Total Miscellaneous Tanks	27%	48.740	49.730	81.158	0.156	1.281	184.948	

Item Name	Quantity	Total Mass	Total Volume	Long. Arm	Trans. Arm	Vert. Arm	Total FSM	FSM Type
		tonne	m^3	m		m	tonne.m	
Other Items								
Crew and effects	1	16.500		\$3.000	0.000	14.000	0.000	User Specifie
Permanent Stores	1	50.000		70.000	0.000	7.000	0.000	User Spedfie
Consumable Stores	0.5	25.000		83.000	0.000	8.000	0.000	User Spedfle
Turntable	1	573.240		49.004	0.000	9.181	0.000	
Cable - Product	1	5000.000		49.000	0.000	11.500	0.000	User Spedfle
Cable Laying Deck Equipment	1	1285.940		29.006	1.126	11.468	0.000	
Equipment Foundations	0	0.000		3.324	0.000	7.462	0.000	
Contract Deck Cargo	0	0.000		40.000	0.000	12.000	0.000	User Specifie
Crane	1	129.100		33.307	-9.382	16.170	0.000	
Total Other Items		7079.780		45.430	0.034	11.353	0.000	
Total Loadcase		12184.094	610.402	49.153	-0.003	9.080	6041.139	
FS correction						0.496		
VCG fluid						9.576		





9.12.2 Equilibrium and Extreme Draughts

Draft Amidships m	4.762
Displacement t	12164
Heel deg	0.0
Draft at FP m	4.742
Draft at AP m	4.783
Draft at LCF m	4.764
Trim (+ve by stern) m	0.041
LCB from zero pt. (+ve fwd) m	49.150
LCF from zero pt. (+ve fwd) m	46.523
KB m	2.498
KG fluid m	9.576
BMtm	16.478
BMLm	168.003
GMt corrected m	9.400
GMLm	160.925
KMtm	18.976
KMLm	170.501
Immention (TPc) tonne/cm	28.351
MTc tonne.m	199.448

Extreme Draft at Transom m	4.797
Extreme Draft at Aft Marks m	4.796
Extreme Draft at Midships m	4.776
Extreme Draft at Midships Marks m	4.777
Extreme Draft at Forward Marks m	4.759
Trim over Marks (+ve by Stern) m	0.036



CONDITION AFTER SINKING

Crew reported:

- Starboard side vents blowing water before vessel listing to starboard and sinking
- Engine room flooded
- List = 40 degrees



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POWER OUTAGE IN NITEROI CAUSED BY DAMAGE TO PRE-EXISTING CABLE







RISK BASED DECISION MAKING

PRIORITIZATION

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- PRIORITY IDENTIFICATION IS BEST REACHED WHEN RISKS ARE ASSESSED (ESPECIALLY TRUE WHEN CONFLICTING INTERESTS EXIST).
- EXAMPLES POTENTIAL POLLUTION, COMMUNITY IMPACT, HAZARDS TO NAVIGATION OR SURROUNDINGS
- IN OUR EXAMPLE THE VESSEL MUST BE MOVED TO FACILITATE A POWER CABLE REPAIR.
- TEMPORARILY ADDITIONAL POWER CAN BE TRANSMITTED ON ALTERNATE CABLES WITH LIMITATIONS OF POWER USAGE MANDATED.





RISK ASSESSMENT APPLICATIONS

EXAMPLES:

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- CONTRACT TERMS AND CONDITIONS
- OPERATIONAL METHODOLOGIES
- ENVIRONMENTAL IMPACT POTENTIAL
- SAFETY AND HEALTH
- COMMERCIAL CONSIDERATIONS



HANDOVER – SPECIALIST OPERATIONS









Contents

- 1 Introduction to offshore division
- 2 The scenario potential losses / claims
- **3** Pooling Agreement and poolable P&I cover
- 4 Contracting
- **5** Offshore P&I cover club cover for specialist operations
- 6 Contract works exclusion
- 7 The scenario application of poolable and non poolable P&I cover



Standard Club

Offshore Division

• Over 40 years of experience



- Mutual (poolable) and non mutual (non poolable) cover
- Non poolable cover provided under separate non pool reinsurance programme
- Non pool limits available up to US\$ 1 billion





The Scenario – Potential losses / claims





Pooling Agreement

• Access to Mutual cover governed by Pooling Agreement (PA)

An Honrowent adjuster the 12 water and incident and made the state of the state of the state of the "TERMAN IN THE MAN AND PROVIDE AND ADDRESS." more hour of the has no the new York Body Bay and the State Agreent in Secondary Sought State and Social C. And Statements Contraction on Andrease advalate the state of the second and a first state Republic Support of Indiana Standing of the Local which he defined that the stands have been Sall-scattle Brancosky Louised S.Y Jathan Star South and all the tage 141 M. Brand Constitution Statistics Barrison, Mindow Parallel and Street Street Paral Street Street La Mariaking They were an and have the same of the barrent of the whether a second with the said the second second 20 Bernet Roll & Trail Roll & which have the state of the state of the state of the second distance in the property as will be mit mit a print will be you have a rate by 1 hand 83- +2 and the same decountry and other with good to work it in the And the last will be seen to go and a side of the second second · The effort and a re- such that the sure I returned It down had a without them and the family of the second second second and the second second About and and and discounting the second card descent spectral in will gold at if the section provides that and the section of and is not in the state of the state of the state of the state of the state arrest of providing and interest with last it as why / Simples hade The Parlacence where it the chargement that -- But he will not many a series of the States and a and Table and Annual Strends and and the second s and press there we are build for the first state and the first of the a how the same of a second should be seen as him to be a William Restantioned states There is the same That is the then are in time to are The formall for y to man of the same And pipthing ports had any to be adversed to be not State Total and " house the set and shares the same being the said of france in same and the the proof and a speed Barris Bring & here is done on the Software 1 - Think and Frid All and the second the thermal party of "These from all should not so the set of some 14 James Sont of 18 James Sugar 19 and said he want of a group of the second second Annal Traine State property and a format & prove and the of the grad and and and and the And the \$ & applying and the property and \$ in the second day a married to the second second the purg the taken 1 At a mart of the same of stands and formation and the fighter design had added and and and

- (a) Eligibility of ship types
- (b) Eligibility of operation
- (c) Contracting

How does the PA apply to a cable layer?





Pooling Agreement - Mutual / Poolable Cover

- P&I Clubs cover shipowners' legal liabilities to third parties such as:
- Loss of life/personal injury to passengers and crew
- Collisions
- Damage to fixed/floating objects
- Wreck removal
- Pollution
- Cargo loss/damage
- Fines





Pooling Agreement – Eligibility by Type

 Any ship, boat, hydrofoil, hovercraft or other description of vessel... used or intended to be used for any purpose whatsoever in navigation or otherwise on, under, over or in water...

Excluding:

• a unit or vessel constructed or adapted for the purpose of carrying out drilling operations in connection with oil or gas exploration or production







Pooling Agreement – Eligibility by Operation

Liabilities, costs and expenses incurred in respect of an insured Vessel carrying out drilling or production operations in connection with oil or gas exploration or production,





...including any accommodation unit moored or positioned on site as an integral part of any such operations, to the extent that such liabilities, costs or expenses arise out of or during drilling or production operations.



Contracting

- General principles:
- Only assume liabilities at law
- Maintain right to limit
- Contract on knock for knock terms
- Cable layer has contracted as follows:
- Knock for knock in respect of client property
- Indemnity in respect of known existing third party property
- At law liabilities for other third party property







Contracting - cable layer

Unknown pre existing cable: At law liability

Cable being laid: Client property, knock for knock



Known pre – existing cable: Indemnity from client





Pooling Agreement – Cable Layers?

Cable layers are eligible for pooling under the Pooling Agreement, but to what extent?






Specialist Operations Exclusion

- Why are such activities excluded?
 - Great Chicago Flood, 1992
 - Caused by pile driving activities
 - US\$ 2 bn damage!









Eligibility of activities

• Pooling agreement / Club rules contain an exclusion for specialist operations;

Liabilities incurred during the course of performing specialist operations including <u>but not limited</u> to dredging, blasting, pile-driving, well stimulation, cable or pipe laying, construction, installation or maintenance work, core sampling, depositing of spoil, professional oil spill response or professional oil spill response training and tank cleaning (other than on the ship) but excluding fire-fighting





Specialist Operations – Installation





Specialist Operations – Construction





Specialist Operations – Dredging





Specialist Operations – Pile driving







Specialist operations - decommissioning







Specialist operations – Pipe/Cable laying







Club cover for Specialist Operations

Club provides a non-poolable buy-back for this exclusion'

'Specialist Operations extension'

Which covers <u>Third party liabilities arising during the course of performing</u> <u>specialist operations</u>

• Up to agreed limit





Club cover for Specialist Operations

However..

Even during specialist operations poolable cover still responds to;

- > Injury, illness or death of any person on board the ship
- Wreck removal of the ship
- > Oil pollution form the ship

But the following are always excluded;

- □ failure to perform, fitness for purpose / quality of work
- □ loss of/damage to/pollution from/wreck removal of contract work





What is contract work

Definition of contract works

".....including, but not limited to materials, components, parts, machinery, fixtures, equipment and any other property which is or is destined to become a part of the completed project which is the subject of the contract under which the ship is working, or to be used up or consumed in the completion of such project."

- Depends on the scope of work (in this scenario the cable being laid would be considered contract works)
- Covered under CAR Policy





'Typical' cover for cable laying vessel

Poolable P&I entry (in IG Club) plus;

- Specialist operations extension
- Contractual extension
- Divers/ underwater vehicles extension (where member responsible for such operations)

*Typical limits for non poolable extensions : \$5m - \$100m



The scenario – application of poolable and non poolable cover

The Scenario – Application of Poolable and Non Poolable Cover



• During navigation:



- Cable layer subject to full poolable cover as she is neither an ineligible vessel nor performing an ineligible operation under the Pooling Agreement
- No claims arise in the scenario during navigation



The Scenario – Application of Poolable and Non Poolable Cover



- During specialist operations:
- Throughout duration of cable laying the specialist operations non poolable extension will be required to respond to third party liabilities arising including:
 - I. Damage to submerged object
 - II. Damage to pre-existing third party cables
 - III. Consequential losses arising i.e. power outage at Niteroi
- However, some liabilities remain excluded from both poolable and non poolable cover:
 - I. Damage to cables being laid excluded as contract works



The Scenario – Application of Poolable and Non Poolable Cover



- During specialist operations:
- Some liabilities remain poolable even during the course of specialist operations therefore the following liability may be covered up to full poolable limits:
 - I. Wreck removal of cable layer









Contents

- 1 Introduction
- 2 Is it wreck removal?
- 3 Initial response
- 5 Tender process







Why is wreck removal so important?















Why is wreck removal so important?

- The International Group's most expensive claim
- 10 of the 20 most expensive International Group claims
- 62% of the cost of the International Group's 20 most expensive claims
- 4 of the Standard Club's 5 most expensive claims





Number of claims by type



Cargo - 51%
Personal injury - 30%
Collision & FFO - 8%
Misc - 4%
Fines - 3%
Pollution - 3%
DTH - 0.7%
Wreck - 0.3%





Value of claims by type



- Cargo 20%
- Personal injury 22%
- Collision & FFO 13%
- Misc 2%
- Fines 2%
- Pollution 8%
- DTH 3%
- Wreck 30%





Common features/factors

- The location of the wreck
- Jurisdiction
- Contractual arrangements
- The performance of the contractors, salvage master, consultants and the SCR
- Bunker removal requirements
- The involvement of the containers or other problematic cargo
- The degree of the influence or interference by the authorities







What is a wreck?







Salvage

- Salvage
 - "The act of rescuing a ship, or its crew, or its cargo from a shipwreck or fire" (OED)
 - Excluded but for life salvage, pollution, cargo's/ship's proportion of GA
 - 1989 International Convention on Salvage Article 14 on Salvage/SCOPIC
 - Contract Lloyd's Open Form of Salvage Agreement (LOF)







Is it a wreck?

- Actual total loss (Marine Insurance Act s.57)
 - When the vessel is destroyed or is so damaged as to no longer be a ship or where the owner is irretrievably deprived of the ship.
- Constructive total loss (Marine Insurance Act s. 60)
 - When it seems unlikely that the vessel can be recovered or where the costs of recovery and repairs will exceed the ships value.
- Notice of claim or notice of abandonment?





Is it a wreck?

• The insurance position



• Hazard to navigation/threat to the environment or by order of a competent authority?





- Wreck removal
- Pollution
- People claims (crew/others)
- Cargo
- Third-party claims
- Fines







- Wreck removal
- Pollution
- People claims (crew/others)
- Cargo
- Third-party claims
- Fines







- Wreck removal
 - Raising, removal, destruction, lighting or marking
 - Liabilities arising from wreck removal
 - Presence or involuntary shifting (2 years limit)







- Wreck removal
- Pollution
- People claims (crew/others)
- Cargo
- Third-party claims
- Fines







- Wreck removal
- Pollution
- People claims (crew/others)
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- Wreck removal
- Pollution
- People claims (crew/others)
- Cargo
- Third-party claims
- Fines








Sequence of events

- Initial emergency response by authorities
- Notification
- Information-gathering
- Establishing lines of communication
- Building a team





Who makes contact? Facts?

- Emergency telephone
- Member/Broker
- Salvors
- Correspondents
- Social media?



"The vessel is reported to be on a 12 degree list and two of its cargo holds are flooded, but it's believed the tanks containing the Charles ship's heavy fuel oil are undamaged"

075

Objective: Remove the wreck in the most efficient and cost effective way

Local and foreign lawyers

Salvors

Accountants and tax experts



Club

Technical experts

Subject matter experts

Charles

Taylor



Member

The team

Correspondents





Tender process

- **Objective**: Find a suitable contractor to carry out the removal work on best terms
- Invitation to tender:
 - Prepared by technical expert
 - Precise specification of the works in compliance with the wreck removal order
 - Should propose the underlying contractual terms
- Processing the tenders
 - Expert evaluation (practical considerations, time, cost)





What should be considered?

- Selection criteria:
 - Method
 - Logistics/management
 - HSE
 - Wreck and cargo disposal
 - Site restoration
 - Timescale
 - Commercial/contractual







Broad considerations

- Certainty
- Environmentally sensitive
- Cost effective
- Methodology parbuckle and refloat vs demolition in situ
- Likely acceptability to Brazilian authorities local 'content'?





Commercial/contractual considerations

- Price competitive but realistic?
- Lump sum?
- Qualifications timing of works?
- Additional costs delay for weather/sea conditions? Costs of cargo removal?
- Tax domicile, business profits exemption, timescale
- Risk transfer for reward
- BIMCO Wreckstage vs Wreckhire





BIMCO Wreck Removal Forms in Use

- Common contracts
 - BIMCO Wreckhire
 - BIMCO Wreckstage
 - BIMCO Wreckfixed

ľ	Date of Agreement 14 September 2010 Vessel's Name:	THE BALTIC AND INTERNATIONAL MARITIME COUNCIL (BBMCO) STANDARD SHIP MANAGEMENT AGREEMENT CODE NAME: "SHIPMAN 98"
2.	Owners (name, place of registered office and law of registry) (CL 1)	3. Managers (name, place of registered office and taw of registry) (Cl. 1)
	Name	Name CARDIFF MARINE INC.
	Place of registered office	Place of registered office 80 Broad Street, Monrovia, Liberia
	Law of registry	Law of registry Republic of Liberia
4.	Day and year of commoncement of Agreement (CL.2) DATE OF PRESENT AGREEMENT AS PER BOX 1	•
5.	Crew Management (state 'yes" or 'no' as agreed) (<u>CL 3.1</u>) YES	6. Technical Management (state "yes" or "no" as agreed) (<u>CL 3.2</u>) YES
7.	Commercial Management (state "yes" or "no" as agreed) (CL 3.3) YES	 Insurance Arrangements (state "yes" or "no" as agreed) (<u>CI. 1.4</u>) YES
	Accounting Services (state "yes" or "no" as agreed) (<u>CL 3.5</u>) YES	10. Sale or purchase of the Vessel (state 'yes' or 'no' as agreed) (CL 3.6) YES
	Provisions (state "yes" or "no" as agreed) (<u>CL.3.2</u>) YES	12. Bunkering (state "yes" or "no" as agreed) (<u>CL.3.8</u>) VES
	Chartering Services Period (only to be filled in if 'yes' stated in Box 7) (<u>CL 3.30</u>)) Five Years from date indicated in Box 4	14. Owners' Insurance (state alternative (), (i) or (ii) of (<u>1.6.3</u>) 6.3(i)
	Annual Management Fee (state annual amount) (<u>Cl. B.1</u>) Daily Management Fee: Euro 1,500	16. Severance Costs (state maximum amount) (<u>CL 8.4(8)</u> As per applicable Collective Bargaining Agreement (CBA)
	Day and year of termination of Agreement (<u>CL 12</u>) Five Years from date indicated in Box 4	 Law and Arbitration (state alternative <u>19,1, 19,2</u> or <u>19,3</u>; if <u>19,3</u> place of arbitration must be stated) (Cl. 19) 19,1
	Notices (state postal and cable address, telex and telefax number for serving notice and communication (a) <u>IER Owners) (CL 20)</u> c/o CEFAI & ASSOCIATES 5/2 Merchants Street, Valletta, Malta, Tel: (+356) 21222097 Fax: (+356) 212290950 Email: info@refailadvocates.com	 Notices (state postal and cable address, toles and telefax number for servin notice and commission to be Managera) (CL 20) Cardiff Marine Inc. Athens Shipmanagement Office Omega Building, 80 Kilislas Avenue 151 25 Marousi Athens, Greece Tel: -30 210 8090100 Fax: +30 210 8090205
milio	saturally agreed between the party stated in <u>Box 2</u> and the party stated in <u>Box 1</u> to $\frac{1}{20}$, $\frac{1}{20}$. (Budget) and $\frac{1}{22}$ (Associated versets) attached he to found its of Conditions, the provisions of <u>DART</u> and <u>Antenzes 24</u> , <u>TR</u> , <u>sc</u> and <u>D</u> shall perform the state of the	Email: management@cardifLgr at this Agreement consisting of <u>PART</u> and <u>PART</u> as well as <u>Annexes "A</u> " (Or refs. Styll bit networks applied to the providence contained because to the
lign	ature(s) (Owners)	Signature(s) (Managers)

• Other contract forms are available (e.g. Supplytime, LOF)





- Lloyd's Standard Form of Salvage Agreement (LOF)
 - "No cure no pay"
 - Simple contract widely accepted
 - Good for emergency situations
 - SCOPIC





- BIMCO Wreckhire
 - Parts 1 and 2 plus bespoke clauses
 - Time and materials contract
 - "Carrot and stick" bonus and penalties
 - Flexible and widely used





- BIMCO Wreckstage
 - Parts 1 and 2 plus bespoke clauses
 - Lump sum stage payments
 - Costs control





- BIMCO Wreckfixed
 - Parts 1 and 2 plus bespoke clauses
 - "No cure no pay"
 - Fixed price
 - Cost control











SALVAGE FORUM 2017 – SMIT SALVAGE

DOUGLAS MARTIN

STANDARD CLUB - SALVAGE FORUM SCENARIO REVIEW PART 2

RIO DE JANEIRO, BRAZIL

23 NOVEMBER, 2017



INDEX

- **1 SCENARIO REVIEW**
- 2 SALVAGE PLANNING
- **3 OPERATIONS**
- 4 COMMERCIAL
- 5 AUTHORITIES AND STAKEHOLDERS





SCENARIO REVIEW - CABLE LAYER





SCENARIO REVIEW

Scenario:

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- Cable layer navigating Guanabara Bay working in shallow water.
- Once on site and commences cable laying a steering gear failure puts It off course and collides with submerged object.

Vessel takes on water and sinks in shallow water damaging existing cables.

pre-

SCENARIO REVIEW - POWER CABLE LAYING FROM NITEROI



