

BW LPG Ltd.

GAS FORM-C
based on the
OCIMF / SIGTTO
SHIP INFORMATION QUESTIONNAIRE
for
GAS CARRIERS
2nd Edition 1998

Specifications of the vessel and the gas installations are believed to be correct as per design specifications and capacities, but not guaranteed, and consequently Owners are not to be held accountable for such.

We further reserve our rights for normal wear and tear on cargo equipment in respect of loading-, discharging-, cooling-rates and time for changing cargo grades etc., including but not limited to capacity of cargo re-heaters, compressors, pumps and other equipment, as described in this form-C as these descriptions, as described above, refers to design capacities.

INDEX

	GENERAL INFORMATION	PAGE
A1	Principal Ship Particulars	2-3
A2	Hull Dimensions	4
A3	Immersion	4
A4	Loaded Particulars	4-5
A5	Parallel Mid-Body Dimensions	6
A6	Bunker Specifications and Capacities	6
A7	Fuel Consumption Details	6
A7	Speed/Consumption (Appendix)	7
A8	Main Engine Particulars	7
A9	Auxiliary Plants	7
A10	Power/Speed Information	7
A11	Thrusters	7
A12	Fresh Water	7
A13	Ballast Capacities and Pumps	8
A14	Mooring Equipment	8-10
A15	Navigational Equipment	10-11
A16	Communication and Electronics	11
	CARGO SYSTEMS	
B1	Cargo - General Information	12
B2	Cargo Tanks	12
B3	Cargo Tank Capacities	13-15
B16	Deck Tank Capacities	15-16
B4	Loading Rates	16-17
B5	Discharging - General	17-18
B6	Discharge Performance	18
B7	Unpumpables	18
B8	Vaporising Unpumpables	18
B9	Reliquefaction Plant	18-19
B10	Section not in use.	
B11	Cargo Temperature Lowering Capability	19
B12	Inert Gas and Nitrogen	19-20
B13	Cargo Tank Inerting / De-Inerting	20
B14	Gas Freeing to Fresh Air	20
B15	Changing Cargo Grades	20-21
B17	Pre-Loading Cooldown	21-22
B18	Vaporiser	22
B19	Blower	22
B20	Cargo Re-Heater	22
B21	Hydrate Control	22
B22	Cargo Measurement	22-23
B23	Cargo Sampling	23
B24	Cargo Manifold	24-25
B25	Cargo Manifold Reducers	25-26
B26	Connections to Shore for ESD and Communication Systems	26
B27	Manifold Derrick/Crane	26
B28	Stores Derrick/Crane	
B29	Sister Vessel(s)	

**SECTION A
GENERAL INFORMATION**

A1 PRINCIPAL SHIP PARTICULARS

1.1	Date questionnaire completed	23-Jul-17
1.2	Name of vessel	BW Njord
1.3	LR/IMO number	9741827
1.4	Last previous name	Aurora Njord
1.4.1	Date of name change	06/03/2017
1.5	Second last previous name	-
1.5.1	Date of name change	-
1.6	Third last previous name	-
1.6.1	Date of name change	-
1.7	Fourth last previous name	-
1.7.1	Date of name change	-
1.8	Flag	Marshall Islands
1.9	Port of Registry	Majuro
1.10	Official number	6840
1.11	Call sign	V7RX3
1.12	INMARSAT FBB numbers	+870-773-407-429
1.13	Vessel's telephone number (V-Sat)	+60-39-2121-338 +47-2396-2494
1.13.1	Vessel's mobile number	
1.14	Vessel's fax number	+870-783-400-309
1.15	Vessel's telex number (Inmarsat-C)	453842540 453842541
1.16	Vessel's E-mail address	master.bwnjord@ship-bw.wilhelmsen.com
1.17	INMARSAT C number	453842540 453842541
1.18	Vessel's MMSI number	538006840
1.19	Type of vessel	Gas carrier (VLGC)

OWNERSHIP AND OPERATION

1.20	Registered Owner	BW Constellation II Limited
	Full address	Clarendon House 2 Church Street Hamilton HM11, Bermuda.
	Office telephone number	+(65) 6705 5588
	Office telex number	
	Office fax number	+(65) 6570 6056
	Office Email address	lpg.commercialdevelop@bwlpg.com
	Contact person	Joel Wee
	Contact person after hours telephone number	+(65) 6705 5588
1.21	Name of technical operator (If different from above)	Wilhelmsen Ship Management Sdn Bhd
	Full Address	18th floor, 1 Sentral, Jln Travers, Kuala Lumpur Sentral, 50400 Kuala Lumpur, Malaysia.
	Office telephone number	+60 3 20845600
	Office telex number	NIL
	Office fax number	+60 3 20845604/ 5605
	Office Email address	wsmkl.vetting@wilhelmsen.com
	Contact person	Capt. Lars Anders Andersson
	Contact person after hours telephone number	+60 3 2084 5601
	Emergency callout number	+60 17 3659307
	Emergency callout pager number	
	Contact details for person responsible for oil spill response	Capt. Lars Andersson, H/P: +60 17 3659307
	Number of years controlled by technical operator	1.3

Years

1.22	Total number of ships operated by this Operator	63	
1.23	Number of years ship owned	0.3	Years
1.23.1	Name of commercial operator (If different from above)	BW LPG Ltd	
	Full Address	Mapletree Business City10 Pasir Panjang Rd.#17-02Singapore117438	
	Office telephone number	Tel: +65-6705-5588	
	Office telex number	Fax:+65-6570-6056	
	Office fax number		
	Office Email address	fleetops2@bwlpg.com	
	Contact person	Mr. Kevin Knott	
	Contact person after hours telephone number	+65 6705 5520	
	Emergency callout number	+65 9030 2591	
	Emergency callout pager number		
	Number of years controlled by commercial operator	0.4	Years

BUILDER

1.24	Builder	Hyundai Heavy Industry	
1.25	Name of yard vessel built at	HHI	
1.26	Hull number	2786	
1.27	Date keel laid	20/10/2015	
1.28	Date launched	31/12/2015	
1.29	Date delivered	21/03/2016	
1.30	Date of completion of major hull changes, - if any.	-	
1.31	If changes were made, what changes were made and at which yard were they carried out	NA	

CLASSIFICATION

1.32	Classification society	Det Norske Veritas	
1.33	Class Notation	+1A1 Tanker for liquefied Gas Ship Type 2G (-50C, 610kg/m3,0.275 bar), E0, BIS,TMON,COAT-PSPC(B), BWM(T), SPM, CLEAN, NAUTICUS(New building), ERS	
1.34	If Classification society changed, name of previous society	N/A	
1.35	If Classification society changed, date of change	N/A	
1.36	Was ship built in accordance with the following regulations:		
	IMO	Yes	
	US COAST GUARD	Yes	
	RINA	No	
	Other: _____		
1.37	IMO certification	Det Norske Veritas	
	Certificate of fitness - IGC		
	Certificate - A328		
	Certificate - A329		
	Letter of Compliance		
	Issued by		
1.38	Unattended Machinery Space Certificate	Det Norske Veritas	
1.39	Net Registered Tonnage	18667	
1.40	Gross Registered Tonnage	47384	
1.41	Suez Net Tonnage - Canal Tonnage	44881.32	
	Suez Gross Tonnage	50381.56	
1.42	Panama Net Tonnage - Canal Tonnage	39074	
	Panama Gross Tonnage	-	

A2 HULL DIMENSIONS

2.1	Length overall (LOA)	225.216	Metres
2.2	Length between perpendiculars (LBP)	220.00	Metres
2.3	Distance bow to bridge	187.26	Metres
2.4	Distance bridge front - mid point manifold	75.80	Metres
2.5	Distance bow to mid-point manifold	111.46	Metres
2.6	Extreme breadth	36.64	Metres
2.7	Extreme depth	22.20	Metres
2.8	Summer draught	12.022	Metres
2.9	Corresponding Summer deadweight	54413	Tonnes
2.10	Light displacement	19284	Tonnes
2.11	Loaded displacement (Summer deadweight)	73697	Tonnes
2.12	Cargo tanks cubic capacity - 100%	84106.8	Cubic metres
2.12.1	Deck tank(s) cubic capacity - 100%	N/A	Cubic metres
2.12.2	Cargo tanks cubic capacity - 98%	82424.7	Cubic metres
2.12.3	Deck tank(s) cubic capacity - 98%	N/A	Cubic metres
2.13	Distance from keel to highest point	49.340	Metres
2.14	Air draught (normal ballast condition)	Abt 41.34	Metres

A3 IMMERSION

		Tonnes / cm @ metres draught	
3.1	TPC - in normal ballast condition	64.10	6.66
	TPC - in loaded condition (summer deadweight)	70.58	12.022

A4 LOADED PARTICULARS

4.1	Cargo grade	n-Butane	iso-Butane	
4.2	Density	0.6007	0.5965	
4.3	Cargo loadable	49430.6	49067.6	Tonnes
4.4	Bunkers - FO	2180	2180	Tonnes
4.5	Bunkers - DO	150	150	Tonnes
4.6	Fresh water	450	450	Tonnes
4.7	Stores & spares			Tonnes
4.8	Lub oil	100	100	Tonnes
4.9	Ballast	0	0	Tonnes
4.10	x	52500	52500	Tonnes
4.11	Draught - forward	11.00	11.00	Metres
	Draught - aft	12.50	12.50	Metres
	Draught - mean	11.75	11.75	Metres

	Cargo grade	Propane	Propylene	
	Density	0.583	0.6095	
	Cargo loadable	47908.8	50078.8	Tonnes
	Bunkers - FO	2180	2180	Tonnes
	Bunkers - DO	150	150	Tonnes
	Fresh water	450	450	Tonnes
	Stores & spares			Tonnes
	Lub oil	100	100	Tonnes
	Ballast	0	0	Tonnes
	Deadweight	51000	53500	Tonnes
	Draught - forward	10.7	11	Metres
	Draught - aft	12.2	12.5	Metres
	Draught - mean	11.45	11.8	Metres

Cargo grade
 Density
 Cargo loadable
 Bunkers - FO
 Bunkers - DO
 Fresh water
 Stores & spares
 Lub oil
 Ballast
 Deadweight
 Draught - forward
 Draught - aft
 Draught - mean

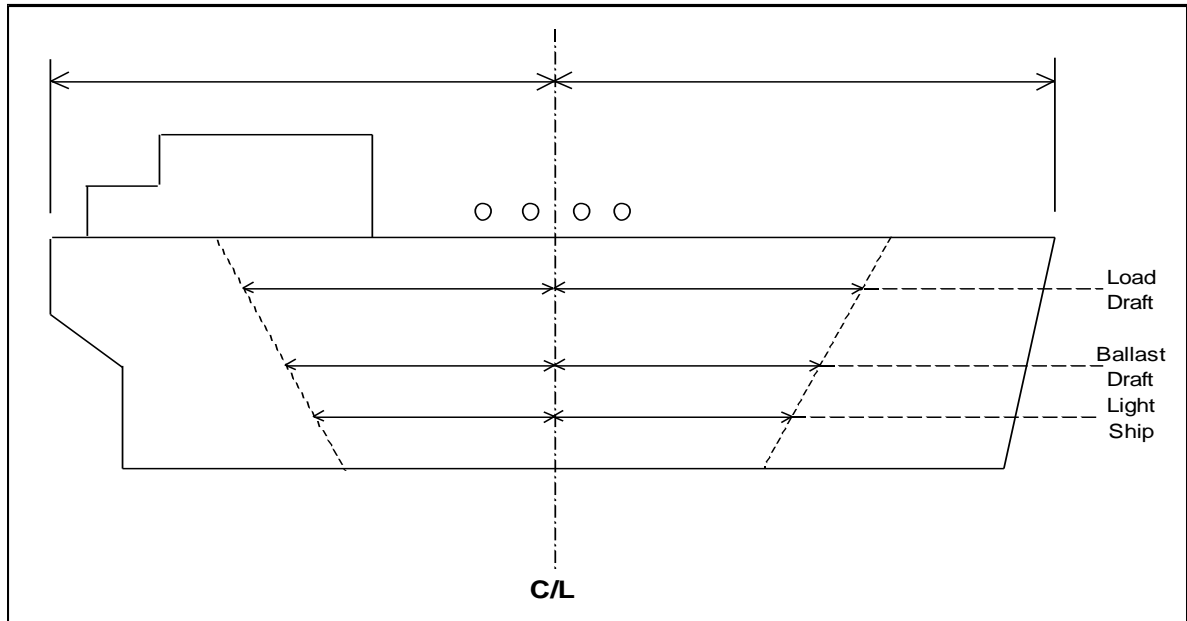
Ethylene	Ammonia	
NA	NA	
		Tonnes
		Tonnes
		Tonnes
		Tonnes
		Tonnes
		Tonnes
		Tonnes
		Metres
		Metres
		Metres

Cargo grade
 Density
 Cargo loadable
 Bunkers - FO
 Bunkers - DO
 Fresh water
 Stores & spares
 Lub oil
 Ballast
 Deadweight
 Draught - forward
 Draught - aft
 Draught - mean

VCM	Propylene Oxide	
NA	NA	
		Tonnes
		Tonnes
		Tonnes
		Tonnes
		Tonnes
		Tonnes
		Tonnes
		Metres
		Metres
		Metres



A5 PARALLEL MID-BODY DIMENSIONS



5.1	Light ship	38.86	Metres
5.2	Forward to mid-point manifold - light ship	8.96	Metres
5.3	Aft to mid-point manifold - light ship	29.90	Metres
5.4	Normal ballast	87.54	Metres
5.5	Forward to mid-point manifold - normal ballast	43.38	Metres
5.6	Aft to mid-point manifold - normal ballast	44.16	Metres
5.7	Loaded SDWT	103.25	Metres
5.8	Forward to mid-point manifold - loaded SDWT	43.64	Metres
5.9	Aft to mid-point manifold - loaded SDWT	59.61	Metres

A6 BUNKER CAPACITIES

Main engine
 Auxiliary engine(s)
 Other: _____

Grade	Capacity @ 98%
380cST	2458.7
LS MGO	608.8

A7 FUEL CONSUMPTION DETAILS

- 7.1 At sea - normal service speed
- 7.2 At sea - normal service speed - while conditioning cargo
(Cooling down condition)
- 7.3 In port - loading
- 7.4 In port - discharging
- 7.5 In port - idle

Grade		
Fuel oil		Tonnes/day
Diesel oil		Tonnes/day
Gas oil		Tonnes/day
Fuel oil		Tonnes/day
Diesel oil		Tonnes/day
Gas oil		Tonnes/day
Fuel oil		Tonnes/day
Diesel oil		Tonnes/day
Gas oil		Tonnes/day
Fuel oil		Tonnes/day
Diesel oil		Tonnes/day
Gas oil		Tonnes/day

Based on FO LCV=10200kcal/kg, MDO LCV=10200kcal/kg under ISO reference condition

A7 SPEED/CONSUMPTION

Copies of the vessel's Speed and Consumption Graph for both Laden and Ballast conditions are enclosed?

NO

A8 MAIN ENGINE PARTICULARS

8.1	Main engine make and type	HYUNDAI- MAN B&W / 6G60ME-C9.2	
8.2	Number of units	6	
8.3	Maximum continuous rating (MCR) per engine	KW @ RPM	
		12400	92.2
8.4	Total available power	at 103 rpm	HP KW
8.5	Normal service power	at 89 rpm	HP KW
			11160

A9 AUXILIARY PLANTS

9.1	Make and type of auxiliary generators / engines	HHI-EMD / 8H21/32	
9.2	Number of units	3	
9.3	Maximum generator output per unit	RPM	Kilowatts
	Unit no. 1	720	1280
	Unit no. 2	720	1280
	Unit no. 3	720	1280
9.4	Shaft generator		-
9.5	Total available power		3840
9.6	Emergency generator	1800	130
9.7	Emergency fire pump - type	CENTRIFUGAL, VERTICAL, SELF-PRIMING, ELEC. MOTOR	
	Delivery pressure		10
	Motive power	Electric	
	If electrical, - indicate power required		55
9.8	Steering gear - type	2-RAM 4 Cylinder Electro Hydraulic	
	Indicate power required to steer the vessel with one pump unit		45

A10 POWER/SPEED INFORMATION

10.1	Trial data	BHP	
		MRC	SHP
		Speed	Knots
		Draught	Metres
10.2	Normal service speed	BHP	
		MRC	SHP
		Speed	Knots
		Draught	Metres

A11 THRUSTERS

11.1	Make and type	N/A	
11.2	Bow thruster	(output)	N/A
11.3	Stern thruster	(output)	N/A

A12 FRESH WATER

12.1	Capacity of distilled tanks	NA	Tonnes
12.2	Capacity of domestic tanks	455.4	Tonnes
12.3	Daily consumption	NA	Tonnes
	Distilled	13	Tonnes
12.4	Daily evaporator capacity	22	Tonnes
	Domestic		

A13 BALLAST CAPACITIES AND PUMPS

Tank	Capacity (m3)	Number
13.1 Fore peak	1701.8	1
13.2 Wing and or side tanks	16660.8	8
13.3 Double bottom tanks		
13.4 Aft peak	1152	1
13.5 Other:		
13.6 Total	19514.6	10

13.7 Ballast pump make and type	SHIN SHIN MACH/ MDC 350C
13.8 Number of pumps	2
13.9 Total capacity	1600 (2 x 800) M3/hour
13.10 Location	E/R FLOOR FWD
13.11 Control location	CARGO CONTROL ROOM

A14 MOORING EQUIPMENT

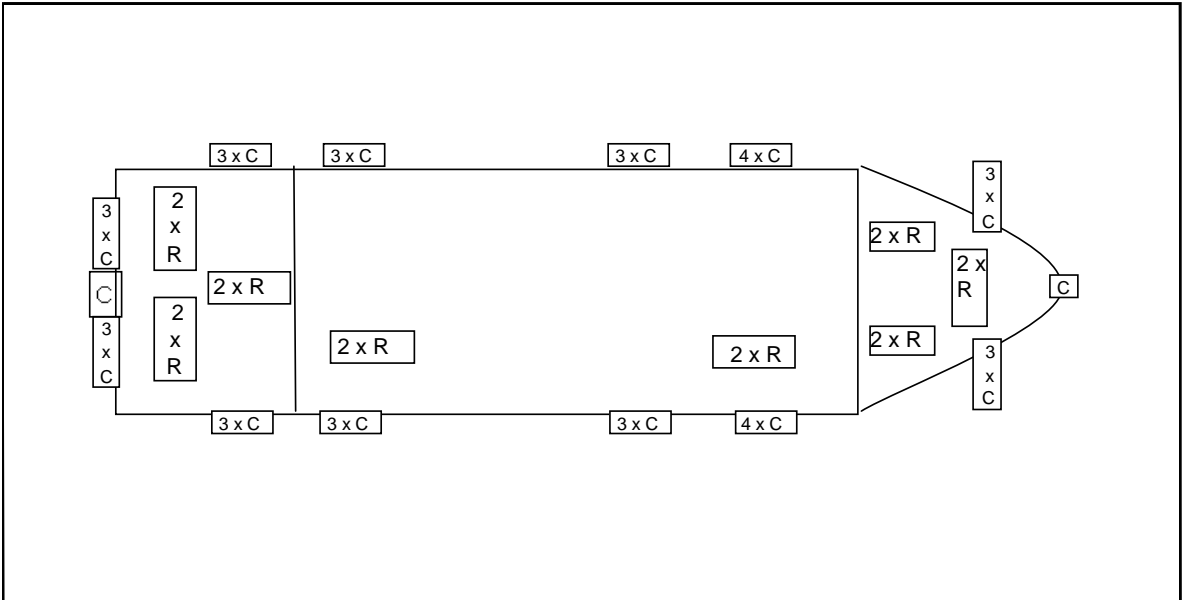
14.1 ROPES

Indicate on the diagram below the position of:

- Winch Mounted Ropes (R)
- Open Fairleads (O)
- Closed Fairleads (C)

Alternatively enclosed copy of vessel's Mooring arrangements in A4 format.

NO



MOORING ROPES (ON DRUMS)

Mooring Ropes (On Drums) Forecastle - Number

Diameter

Material

Length

Breaking Strength

Mooring Ropes (On Drums) Forward Main Deck -

Number

Diameter

Material

Length

Breaking Strength

	6	
	35	mm.
GALV STEEL WIRE ROPE(IWRC)	220	Metres
	837	KN
	2	
	35	mm.
GALV STEEL WIRE ROPE(IWRC)	220	Metres
	837	KN

Mooring Ropes (On Drums) Aft Main Deck - Number

Diameter	2	
	35	mm.
Material	GALV STEEL WIRE ROPE(IWRC)	
Length	220	Metres
Breaking Strength	837	KN
Mooring Ropes (On Drums) Poop - Number	6	
Diameter	35	mm.
Material	GALV STEEL WIRE ROPE(IWRC)	
Length	220	Metres
Breaking Strength	837	KN

OTHER MOORING LINES**Mooring Ropes not on Drums - Number**

Diameter	4	
	62	mm.
Material	Polyolefin resin & Polyester Mixed	
Length	220	Metres
Breaking Strength	829	KN
Fire Wires - Number	2	
Diameter	38	mm.
Material	GALV STEEL WIRE ROPE(IWRC)	
Length	130	Metres
Breaking Strength	539	KN

14.2

MOORING WINCHES**Forecastle - Number**

Single Drum or Double Drums	2	
Split Drums Y/N	DOUBLE DRUM	
Motive Power	Y	
Heaving Power	HYD.	
Brake Capacity	20	Tonnes
Hauling Speed	50.4	Tonnes
Forward Main Deck - Number	15	Metres/Min.
Single Drum or Double Drums	2	
Split Drums Y/N	DOUBLE DRUM	
Motive Power	Y	
Heaving Power	HYD.	
Brake Capacity	20	Tonnes
Hauling Speed	50.4	Tonnes
Aft Main Deck - Number	15	Metres/Min.
Single Drum or Double Drums	1	
Split Drums Y/N	DOUBLE DRUM	
Motive Power	Y	
Heaving Power	HYD.	
Brake Capacity	20	Tonnes
Hauling Speed	50.4	Tonnes
Poop - Number	15	Metres/Min.
Single Drum or Double Drums	3	
Split Drums Y/N	DOUBLE DRUM	
Motive Power	Y	
Heaving Power	HYD.	
Brake Capacity	20	Tonnes
Hauling Speed	50.4	Tonnes
	15	Metres/Min.

14.3

ANCHORS AND WINDLASS

Windlass motive power(e.g. steam, hydraulic)	HYD.	
Hauling power	34.2	Tonnes
Brake holding power	236.9	Tonnes
Anchor type	HHP TYPE	
Weight	8.775	Tonnes

Is spare anchor carried	1	
Cable diameter	84	mm.
Number of shackles port cable	12	
Number of shackles starboard cable	13	

14.4 **TOWING ARRANGEMENTS**

Is the vessel fitted with a Towing Bracket Aft?	YES	
If Yes, state SWL	200	Tonnes
Is Towing chain provided	YES	
Dimensions of Towing wire	80	mm.
	100	Metres

14.5 **WINDAGE**

Windage on ballast draught	End-on	1027.3	Squaremetres
	Lateral	4098	Squaremetres

A15 NAVIGATIONAL EQUIPMENT

15.1	Magnetic compass		YES
15.2	Off Course Alarm - Magnetic compass		YES
15.3	Gyro compass		YES
		Number of Units	2
15.4	Off Course Alarm - Gyro compass		YES
15.5	Gyro (Bridge) Repeaters		YES
		Number of Units	5
15.6	Radar 3cm		YES
15.7	Radar 10cm		YES
15.8	Are radars gyro stabilised?		YES
15.9	Radar plotting equipment		NO
15.10	ARPA		YES
15.11	ECDIS		YES
15.12	Depth sounder with recorder		YES
15.13	Depth sounder without recorder		NO
15.14	Speed/distance indicator		YES
15.15	Doppler log		YES
15.16	Docking approach Doppler		YES
15.17	Rudder angle indicator		YES
15.18	Rudder angle indicator on Each Bridge Wing		YES
15.19	RPM indicator		YES
15.20	RPM indicator on Each Bridge Wing		YES
15.21	Controllable pitch propeller indicator		N/A
15.22	Thruster(s) indicator		N/A
15.23	Rate of turn indicator		YES
15.24	Radio direction finder		N/A
15.25	Navtex receiver		YES
15.26	GPS		NO
15.26.1	DGPS		YES
15.27	Transit SATNAV		N/A
15.28	Decca navigator		N/A
15.29	Omega		N/A
15.30	Loran C		N/A
15.31	Weather fax		YES
15.32	Sextant(s)		YES
15.33	Signal lamp ALDIS		YES
15.34	Anemometer		YES
15.35	Engine order recorder		YES
15.35.1	VDR (Voyage Data Recorder)		YES
15.36	Course recorder		YES
15.37	Are steering motor controls and engine controls fitted on bridge wings?		NO



15.38	Is bridge equipped with a 'Dead-Man' alarm?		YES
15.39	What chart outfit coverage is provided	World-wide	YES
		Limited	NO
	If limited, - please indicate area(s) covered	N/A	
15.40	Formal chart correction system in use		Navtor
15.41	Electronic Chart system in use		YES

A16 COMMUNICATIONS AND ELECTRONICS

16.2	What GMDSS areas is the vessel classed for? A1 A2 A3 A4		A1,A2 and A3
16.3	Transponder (SART)		YES
16.4	EPIRB		YES
16.5	How many VHF radios are fitted on the bridge?		2
16.6	Is vessel fitted with VHF in the cargo control room (CCR)?		YES
16.7	Is the CCR connected to the vessel's internal communication system?		YES
16.8	How many intrinsically safe walkie talkies are provided for cargo handling?		11
16.9	Is vessel fitted with an INMARSAT satellite communications system?		YES
16.10	Does vessel carry at least three survival craft two-way radio telephones?		YES
16.11	Inmarsat satellite system		YES
	Specify system type A, B or C		C
16.12	2182kHz bridge auto alarm		NO
16.13	Radio telephone distress frequency watch receiver		YES
16.14	Emergency lifeboat transceiver		NO
16.15	Can vessel transmit the helicopter homing signal on 410 kHz?		NO
16.16	Full set of Radio List publications		YES



SECTION B CARGO SYSTEMS

B1 CARGO - GENERAL INFORMATION

1.1 List products which the ship is Certified to carry

Commercial Butane (iso and normal)
Butylene
Pure Propane
Commercial Propane (max. 8.0 mole% ethane in the liquid phase)
Propylene
Butadiene
Propane-Butane Mixtures

Transport and Carriage Conditions

1.2	Minimum allowable tank temperature	-50	Deg. Celsius
1.3	Maximum Permissible tank pressure	275	mBar
1.4	List Number of grades that can be loaded/discharged simultaneously and completely segregated without risk of contamination?	2	
1.5	List the Number of grades that can be carried simultaneously and completely segregated without risk of contamination?	2	
1.6	What is the Number of Products that can be conditioned by reliquefaction simultaneously?	2	
1.7	State the number of natural segregation's (NB: Separation must be by the removal of spools or the insertion of blanks)	2	

B2 CARGO TANKS

2.1	Type and materials of cargo tanks	Low temperature Carbon Manganese steel		
2.2	Maximum allowable relief valve setting	Ref. 2.3	Bar gauge	
2.2.1	IMO Setting	0.275	Bar gauge	
2.2.2	USCG Setting	-	Bar gauge	
2.3	Safety valve set pressure, - if variable stipulate range of pilot valves	0.4 in harbor	0.275 at seagoing	Bar gauge
2.4	Maximum allowable vacuum	-0.05	Bar gauge	
2.5	Maximum cargo density at 15 deg Celsius	0.61	Kg/cm2	
2.6	Maximum rate of cool-down	10	Deg Cel / Hour	
2.7	State any limitations regarding partially filled tanks			

NIL

2.8 State allowable combinations of filled and empty tanks

1. FULL-FULL-FULL-FULL
2. MT-FULL-MT-MT
3. FULL-MT-FULL-FULL
4. MT-FULL-MT-FULL
5. FULL-MT-FULL-MT.

B3 CARGO TANK CAPACITIES

Tank number / location

Capacity m3 (100%)
 Capacity 98%
 n-Butane capacity
 Butane temperature
 iso-Butane capacity
 iso-Butane temperature
 Propane capacity
 Propane temperature
 Propylene capacity
 Propylene temperature
 Vinyl Chloride Monomer capacity
 Vinyl Chloride Monomer temperature
 Ethylene capacity
 Ethylene temperature
 Propylene Oxide capacity
 Propylene Oxide temperature
 Ammonia capacity
 Ammonia temperature

1 P+S		
17944.7	m3	
17585.8	m3	
10579.6	Tonnes	
0.0	Deg. C	
10502.0	Tonnes	
-11.0	Deg. C	
10254.0	Tonnes	
-42.5	Deg. C	
10718.4	Tonnes	
-47.0	Deg. C	
NA	Tonnes	
-	Deg. C	
NA	Tonnes	
-	Deg. C	
NA	Tonnes	
-	Deg. C	
NA	Tonnes	
-	Deg. C	

Tank number / location

Capacity m3 (100%)
 Capacity 98%
 n-Butane capacity
 n-Butane temperature
 iso-Butane capacity
 iso-Butane temperature
 Propane capacity
 Propane temperature
 Propylene capacity
 Propylene temperature
 Vinyl Chloride Monomer capacity
 Vinyl Chloride Monomer temperature
 Ethylene capacity
 Ethylene temperature
 Propylene Oxide capacity
 Propylene Oxide temperature
 Ammonia capacity
 Ammonia temperature

2 P+S		
22503.2	m3	
22053.1	m3	
13258.2	Tonnes	
0.0	Deg. C	
13160.8	Tonnes	
-11.0	Deg. C	
12850.0	Tonnes	
-42.5	Deg. C	
13432.0	Tonnes	
-47.0	Deg. C	
NA	Tonnes	
-	Deg. C	
NA	Tonnes	
-	Deg. C	
NA	Tonnes	
-	Deg. C	
NA	Tonnes	
-	Deg. C	

Tank number / location

Capacity m3 (100%)
 Capacity 98%
 n-Butane capacity
 n-Butane temperature
 iso-Butane capacity
 iso-Butane temperature
 Propane capacity
 Propane temperature
 Propylene capacity
 Propylene temperature
 Vinyl Chloride Monomer capacity
 Vinyl Chloride Monomer temperature
 Ethylene capacity
 Ethylene temperature
 Propylene Oxide capacity
 Propylene Oxide temperature
 Ammonia capacity
 Ammonia temperature

3 P+S		
22495.4	m3	
22045.5	m3	
13258.2	Tonnes	
0.0	Deg. C	
13160.8	Tonnes	
-11.0	Deg. C	
12850.0	Tonnes	
-42.5	Deg. C	
13432.0	Tonnes	
-47.0	Deg. C	
NA	Tonnes	
-	Deg. C	
NA	Tonnes	
-	Deg. C	
NA	Tonnes	
-	Deg. C	
NA	Tonnes	
-	Deg. C	

Tank number / location

Capacity m3 (100%)
 Capacity 98%
 n-Butane capacity
 n-Butane temperature
 iso-Butane capacity
 iso-Butane temperature
 Propane capacity
 Propane temperature
 Propylene capacity
 Propylene temperature
 Vinyl Chloride Monomer capacity
 Vinyl Chloride Monomer temperature
 Ethylene capacity
 Ethylene temperature
 Propylene Oxide capacity
 Propylene Oxide temperature
 Ammonia capacity
 Ammonia temperature

4 P+S	
20901.2	m3
20483.2	m3
12334.6	Tonnes
0.0	Deg. C
12244.0	Tonnes
-11.0	Deg. C
11954.8	Tonnes
-42.5	Deg. C
12496.4	Tonnes
-47.0	Deg. C
NA	Tonnes
-	Deg. C
NA	Tonnes
-	Deg. C
NA	Tonnes
-	Deg. C
NA	Tonnes
-	Deg. C

Total Capacity of all cargo tanks (100%)
 Total Capacity of all cargo tanks (98%)
 Total Capacity of n-Butane
 Total Capacity of iso-Propane
 Total Capacity of Propane
 Total Capacity of Propylene
 Total Capacity of Vinyl Chloride Monomer
 Total Capacity of Ethylene
 Total Capacity of Propylene Oxide
 Total Capacity of Ammonia

84106.8	m3
82424.7	m3
49430.6	Tonnes
49067.6	Tonnes
47908.8	Tonnes
50078.8	Tonnes
NA	Tonnes
NA	Tonnes
NA	Tonnes
NA	Tonnes

B16 DECK TANK CAPACITIES

Are Deck pressure tank(s) fitted?
 Material of tank(s)
 Maximum allowable relief valve setting

NO	
N/A	
-	Bar gauge

Deck tank number 1 - capacity (100%)
 Capacity 98%
 Propane Capacity
 Butane Capacity
 Propylene capacity
 Ethylene capacity
 Ammonia Capacity

-	m3
-	m3
-	Tonnes
-	Tonnes
-	Tonnes
-	Tonnes
-	Tonnes

Deck tank number 2 - capacity (100%)
 Capacity 98%
 Propane Capacity
 Butane Capacity
 Propylene capacity
 Ethylene capacity
 Ammonia Capacity

-	m3
-	m3
-	Tonnes
-	Tonnes
-	Tonnes
-	Tonnes
-	Tonnes

B4 LOADING RATES

4.1 **From Refrigerated Storage** (Fully Refrigerated at Vessel's Manifold)

Butane - with vapour return
 Butane - without vapour return
 Propane - with vapour return
 Propane - without vapour return
 Butadiene - with vapour return
 Butadiene - without vapour return
 Propylene - with vapour return
 Propylene - without vapour return
 Ethylene - with vapour return
 Ethylene - without vapour return
 Ammonia - with vapour return
 Ammonia - without vapour return
 Vinyl Chloride Monomer - with vapour return
 Vinyl Chloride Monomer - without vapour return
 Propylene Oxide - with vapour return
 Propylene Oxide - without vapour return

2890	Tonnes/Hr.
2890	Tonnes/Hr.
2800	Tonnes/Hr.
2800	Tonnes/Hr.
NA	Tonnes/Hr.
NA	Tonnes/Hr.
2925	Tonnes/Hr.
2925	Tonnes/Hr.
NA	Tonnes/Hr.
NA	Tonnes/Hr.
NA	Tonnes/Hr.
NA	Tonnes/Hr.
NA	Tonnes/Hr.
NA	Tonnes/Hr.
NA	Tonnes/Hr.

4.8 **From Pressure Storage**

Butane 0 deg C - with vapour return
 0 deg C - without vapour return
 10 deg C - with vapour return
 10 deg C - without vapour return
 20 deg C - with vapour return
 20 deg C - without vapour return

2890	Tonnes/Hr.
2890	Tonnes/Hr.
-	Tonnes/Hr.
-	Tonnes/Hr.
-	Tonnes/Hr.
-	Tonnes/Hr.

Propane minus 30 deg C - with vapour return
 Minus 30 deg C - without vapour return
 Minus 20 deg C - with vapour return
 Minus 20 deg C - without vapour return
 Minus 10 deg C - with vapour return
 Minus 10 deg C - without vapour return
 0 deg C - with vapour return
 0 deg C - without vapour return
 10 deg C - with vapour return
 10 deg C - without vapour return
 20 deg C - with vapour return
 20 deg C - without vapour return

-	Tonnes/Hr.
-	Tonnes/Hr.
-	Tonnes/Hr.
-	Tonnes/Hr.
-	Tonnes/Hr.
-	Tonnes/Hr.
-	Tonnes/Hr.
-	Tonnes/Hr.
-	Tonnes/Hr.
-	Tonnes/Hr.
-	Tonnes/Hr.
-	Tonnes/Hr.

Butadiene 0 deg C - with vapour return	-	Tonnes/Hr.
0 deg C - without vapour return	-	Tonnes/Hr.
10 deg C - with vapour return	-	Tonnes/Hr.
10 deg C - without vapour return	-	Tonnes/Hr.
20 deg C - with vapour return	-	Tonnes/Hr.
20 deg C - without vapour return	-	Tonnes/Hr.

Propylene minus 30 deg C - with vapour return	-	Tonnes/Hr.
Minus 30 deg C - without vapour return	-	Tonnes/Hr.
Minus 20 deg C - with vapour return	-	Tonnes/Hr.
Minus 20 deg C - without vapour return	-	Tonnes/Hr.
Minus 10 deg C - with vapour return	-	Tonnes/Hr.
Minus 10 deg C - without vapour return	-	Tonnes/Hr.
0 deg C - with vapour return	-	Tonnes/Hr.
0 deg C - without vapour return	-	Tonnes/Hr.
10 deg C - with vapour return	-	Tonnes/Hr.
10 deg C - without vapour return	-	Tonnes/Hr.
20 deg C - with vapour return	-	Tonnes/Hr.
20 deg C - without vapour return	-	Tonnes/Hr.

Ethylene minus 100 deg C - with vapour return	NA	Tonnes/Hr.
Minus 100 deg C - without vapour return		Tonnes/Hr.
Minus 95 deg C - with vapour return		Tonnes/Hr.
Minus 95 deg C - without vapour return		Tonnes/Hr.
Minus 90 deg C - with vapour return		Tonnes/Hr.
Minus 90 deg C - without vapour return		Tonnes/Hr.
Minus 85 deg C - with vapour return		Tonnes/Hr.
Minus 85 deg C - without vapour return		Tonnes/Hr.

Ammonia minus 20 deg C - with vapour return	-	Tonnes/Hr.
Minus 20 deg C - without vapour return	-	Tonnes/Hr.
Minus 10 deg C - with vapour return	-	Tonnes/Hr.
Minus 10 deg C - without vapour return	-	Tonnes/Hr.
0 deg C - with vapour return	-	Tonnes/Hr.
0 deg C - without vapour return	-	Tonnes/Hr.

VCM minus 10 deg C - with vapour return	NA	Tonnes/Hr.
Minus 10 deg C - without vapour return		Tonnes/Hr.
0 deg C - with vapour return		Tonnes/Hr.
0 deg C - without vapour return		Tonnes/Hr.
10 deg C - with vapour return		Tonnes/Hr.
10 deg C - without vapour return		Tonnes/Hr.
20 deg C - with vapour return		Tonnes/Hr.
20 deg C - without vapour return		Tonnes/Hr.

4.14

Special remarks:

Note 1: The figures given apply for four cargo tanks and three reliquefaction units in operation, where applicable, and for +20 degC ambient temperature.
Note 2: Loading a fully refrigerated vessel from pressurized storage will give unacceptable loading times and therefore not deemed applicable for this type of vessel.

B5 DISCHARGING - GENERAL

Cargo Pumps

5.1	Type of Pumps	Hamworthy Svanehoj DW 250/200-3-k+1	
5.2	Number of pumps per tank	2	
5.3	Rate per Pump	600	m3/hr
5.4	At Delivery Head mlc	120	mlc
5.5	Maximum density	690	Kg/m3

- Booster Pump**
- 5.6 Type of Booster Pumps
 5.7 Number of pumps
 5.8 Rate per Pump
 5.9 At Delivery Head m/c
 5.10 Maximum density

Hamworthy Svanehoj NMB 150e	
2	
600	m3/hr
115	m/c
690	Kg/m3

Copies of pumping curves for cargo and booster pumps are enclosed?

NO

B6 DISCHARGE PERFORMANCE

Full Cargo Discharge Times (using all cargo pumps)

Fully Refrigerated

- Manifold Back Press 1 kP/cm2, with vapour return
 Manifold Back Press 1 kP/cm2, without vapour return
 Manifold Back Press 5 kP/cm2, with vapour return
 Manifold Back Press 5 kP/cm2, without vapour return
 Manifold Back Press 10 kP/cm2, with vapour return
 Manifold Back Press 10 kP/cm2, without vapour return

15	Hours
17	Hours
18	Hours
20	Hours
22	Hours
22	Hours

Pressurised

- Manifold Back Press 1 kP/cm2, with vapour return
 Manifold Back Press 1 kP/cm2, without vapour return
 Manifold Back Press 5 kP/cm2, with vapour return
 Manifold Back Press 5 kP/cm2, without vapour return
 Manifold Back Press 10 kP/cm2, with vapour return
 Manifold Back Press 10 kP/cm2, without vapour return

NA	Hours
NA	Hours
NA	Hours
NA	Hours
NA	Hours
NA	Hours

B7 UNPUMPABLES

- 7.1 Tank number / location
 Tank number / location
 Tank number / location
 Tank number / location
 Total

Tank 1, P&S: 14 m3	mt
Tank 2, P&S: 12 m3	mt
Tank 3, P&S: 14 m3	mt
Tank 4, P&S: 12 m3	mt
52 m3	mt

B8 VAPORISING UNPUMPABLES

- 8.1 Process used
 Time to vaporise liquid unpumpables remaining after full cargo discharge of:
 8.2 Butane
 8.3 Propane
 8.4 Butadiene
 8.5 Propylene
 8.6 Ethylene
 8.7 Ammonia
 8.8 Vinyl Chloride Monomer
 8.9 Propylene Oxide

Hot gas by cargo compressors

18	Hours
8	Hours
NA	Hours
8	Hours
NA	Hours
NA	Hours
NA	Hours
NA	Hours

B9 RELIQUEFACTION PLANT

- 9.1 Plant Design Conditions - air temperature
 9.3 Plant Design Conditions - sea temperature

45	Deg. C
36	Deg. C

9.4	Plant Type Is the plant single stage/direct?	-
9.5	Is the plant two stage/direct?	Two/three stage
9.6	Is the plant simple cascade?	-
9.7	Coolant type	NA

Compressors		
9.8	Compressor type	Piston
9.8.1	Compressor makers name	Buckhardt Compression
9.9	Number of compressors	3
9.10	Capacity per unit	Depending on type of cargo
9.11	Are they Oil Free?	Yes

B11 CARGO TEMPERATURE LOWERING CAPABILITY (AT SEA WITH SEA TEMPERATURE +15C)

Time taken to lower the temperature of:		
11.1	Propane from -5 deg C to - 42 deg C	NA Hours
11.2	Propane from -20 deg C to - 42 deg C	NA Hours
11.3	Propane from -38 deg C to - 42deg C	108 Hours
11.4	Propane from +20 deg C to 0 deg C	NA Hours
11.5	Propane from 0 deg C to -20 deg C	NA Hours
11.6	Butane from +20 deg C to 0 deg C	NA Hours
11.7	Butane from +10 deg C to 0 deg C	NA Hours
11.8	Butane from +10 deg C to -5 deg C	NA Hours
11.9	Butadiene From +20 deg C to -5 deg C	NA Hours
11.10	Propylene From -20 deg C to -47 deg C	NA Hours
11.11	Ethylene From -100 deg C to -104 deg C	NA Hours
11.12	Ammonia From -15 deg C to -33 deg C	NA Hours
11.13	Vinyl Chloride Monomer From -5 deg C to -14 deg C	NA Hours

B12 INERT GAS AND NITROGEN

Main IG Plant		
12.1	Type of system	Inert Gas Generator
12.2	Capacity	5300 Nm3/hr
12.3	Type of fuel used	Marine diesel oil DMA
12.4	Composition of IG - oxygen	1-2 %
	Composition of IG - CO2	Approx. 14 %
	Composition of IG - Nox	Max 100 ppm
	Composition of IG - N2	Balance %
12.5	Lowest dewpoint achievable	-40 Deg. C
12.6	Used for	Inerting of cargo tanks and holds

Auxiliary IG or Nitrogen plant		
12.7	Type of System	NA
12.8	Capacity	- m3/hr
12.9	Composition of IG - oxygen	- %
	Composition of IG - CO2	- %
	Composition of IG - Nox	- %
	Composition of IG - N2	- %

- 12.10 Lowest dewpoint achievable
 12.11 Used for

	-	Deg. C
	-	

Nitrogen

- 12.12 Liquid storage capacity
 12.13 Daily boil-off loss
 12.14 Maximum supply pressure
 12.15 Supply capacity
 12.16 Used for

	NA	m3
	NA	m3
	-	Kp/Cu. Cm
	-	m3/hr

B13 CARGO TANK INERTING/DE-INERTING

- 13.1 Time taken to inert from fresh air to under 5% O2 at minus 25 degree C?
 13.2 Time taken to inert from cargo vapour to fully inert at minus 25 degrees dewpoint when IG density is **less** than product?

 Time taken to inert from cargo vapour to fully inert at minus 25 degrees dewpoint when IG density is **greater** than product?

20	Hours
19	Hours
NA	Hours

B14 GAS FREEING TO FRESH AIR

- 14.1 Plant used
 14.2 Time taken from fully inert condition to fully breathable fresh air?

	Vent fans
	24

B15 CHANGING CARGO GRADES

Indicate number of hours needed to change grades from the removal of pumpables to tanks fit to load and the estimated quantity of Inert Gas and or Nitrogen consumed during the operation:

	Hours	Inert Gas	Nitrogen
From Propane to Butane	60	-	-
From Propane to Butadiene	-	-	-
From Propane to Ethylene	NA	NA	NA
From Propane to Ammonia	NA	NA	-
From Propane to Vinyl Chloride Monomer	NA	NA	NA
From Propane to Propylene Oxide	NA	NA	NA
From Butane to Propane	62	-	-
From Butane to Butadiene	-	-	-
From Butane to Ethylene	NA	NA	NA
From Butane to Ammonia	NA	NA	NA
From Butane to Vinyl Chloride Monomer	NA	NA	NA
From Butane to Propylene Oxide	NA	NA	NA
From Butadiene to Propane	NA	NA	NA
From Butadiene to Butane	NA	NA	NA
From Butadiene to Ethylene	NA	NA	NA
From Butadiene to Ammonia	NA	NA	NA
From Butadiene to Vinyl Chloride Monomer	NA	NA	NA
From Butadiene to Propylene Oxide	NA	NA	NA
From Ethylene to Propane	NA	NA	NA
From Ethylene to Butane	NA	NA	NA
From Ethylene to Butadiene	NA	NA	NA
From Ethylene to Ammonia	NA	NA	NA
From Ethylene to Vinyl Chloride Monomer	NA	NA	NA
From Ethylene to Propylene Oxide	NA	NA	NA
From Ammonia to Propane	NA	NA	NA
From Ammonia to Butane	NA	NA	NA
From Ammonia to Butadiene	NA	NA	NA
From Ammonia to Ethylene	NA	NA	NA
From Ammonia to Vinyl Chloride Monomer	NA	NA	NA
From Ammonia to Propylene Oxide	NA	NA	NA

From Vinyl Chloride Monomer to Propane
 From Vinyl Chloride Monomer to Butane
 From Vinyl Chloride Monomer to Butadiene
 From Vinyl Chloride Monomer to Ammonia
 From Vinyl Chloride Monomer to Ethylene
 From Vinyl Chloride Monomer to Propylene Oxide
 From Propylene Oxide to Propane
 From Propylene Oxide to Butane
 From Propylene Oxide to Butadiene
 From Propylene Oxide to Ethylene
 From Propylene Oxide to Vinyl Chloride Monomer
 From Propylene Oxide to Ammonia

NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA

Cargo Grade Change Operations that cannot be carried out at sea:

Cargo grade change operations applicable for Propylene cannot be carried out at sea since they require Nitrogen supply from shore terminal.

B17 PRE-LOADING COOLDOWN

The following questions ask the Time and Quantity of coolant required to cooldown cargo tanks from ambient temperature to fully gassed up state sufficient to allow loading to commence.

17.1	Propane - Quantity of Coolant Required	450	T
	Propane - Time required to cooldown cargo tanks from ambient temperature with vapour return line	36	Hours
	Propane - Time required to cooldown cargo tanks from ambient temperature without vapour return line	48	Hours
17.2	Butane - Quantity of Coolant Required	435	T
	Butane - Time required to cooldown cargo tanks from ambient temperature with vapour return line	24	Hours
	Butane - Time required to cooldown cargo tanks from ambient temperature without vapour return line	36	Hrs.
17.3	Butadiene - Quantity of Coolant Required	NA	m3
	Butadiene - Time required to cooldown cargo tanks from ambient temperature with vapour return line	NA	Hours
	Butadiene - Time required to cooldown cargo tanks from ambient temperature without vapour return line	NA	Hours
17.4	Propylene - Quantity of Coolant Required	450	T
	Propylene - Time required to cooldown cargo tanks from ambient temperature without vapour return line	NA	Hours
	Propylene - Time required to cooldown cargo tanks from ambient temperature with vapour return line	55	Hours
17.5	Ethylene - Quantity of Coolant Required	NA	m3
	Ethylene - Time required to cooldown cargo tanks from ambient temperature with vapour return line	-	Hours
	Ethylene - Time required to cooldown cargo tanks from ambient temperature without vapour return line	-	Hrs.
17.6	Ammonia - Quantity of Coolant Required		m3
	Ammonia - Time required to cooldown cargo tanks from ambient temperature with vapour return line		Hours
	Ammonia - Time required to cooldown cargo tanks from ambient temperature without vapour return line		Hours

- 17.7 **VCM - Quantity of Coolant Required**
VCM - Time required to cooldown cargo tanks from ambient temperature without vapour return line
VCM - Time required to cooldown cargo tanks from ambient temperature with vapour return line

NA	m3
-	Hours
-	Hours

B18 VAPORISER

- 18.1 Type of Vaporiser
18.2 Number of Vaporisers fitted
18.3 Capacity per unit - **Propane**
18.4 Liquid Supply Rate
18.5 Delivery Temperature
18.6 Capacity per unit - **Ammonia**
18.7 Liquid Supply Rate
18.8 Delivery Temperature
18.9 Capacity per unit - **Nitrogen**
18.10 Liquid Supply Rate
18.11 Delivery Temperature

Shell and Tube type/ Sea Water heated	
1	
4800	m3/hr Vap
19.2	m3/hr Liq
0	Deg. C
NA	m3/hr Vap
NA	m3/hr Liq
NA	Deg. C
NA	m3/hr Vap
-	m3/hr Liq
-	Deg. C

B19 BLOWER

- 19.1 Type of Blower
19.2 Rated Capacity
19.3 Delivery Pressure

2 off Centrifugal fans	
10,000	m3/hr
0.12	Kp/cm2

B20 CARGO RE-HEATER

- 20.1 Type of Re-Heater
20.2 Number Fitted
20.3 Heating Medium
20.4 Discharge rates with sea water at 15 degrees C to raise product temperature of **Propane** from -42 degrees C to 0 degrees C
20.5 Discharge rates with sea water at 15 degrees C to raise product temperature of **Ammonia** from -33 degrees C to 0 degrees C

Shell and Tube type	
1	
Seawater	
600	m3/hr
N/A	m3/hr

B21 HYDRATE CONTROL

- 21.1 Type of Depressant?
21.1.1 Freezing point temperature?
21.2 Quantity of Depressant Carried?
21.3 Means of injection?
Name any other system used

Ethanol	
-114	Deg. C
1200	Ltr.
Portable container with hand pump	
-	

B22 CARGO MEASUREMENT

Level Gauges

- 22.1 Are level gauges local or remote?
22.2 Name of manufacture
22.3 Type
22.4 Rated Accuracy
22.5 Certifying Authority

Remote	
Kongsberg Maritime	
Radar beam type GL-100/5	
+/- 2	mm.
DNV GL	

Temperature Gauges

- 22.6 Name of manufacture
22.7 Type
22.8 Rated Accuracy
22.9 Certifying Authority

Kongsberg Maritime	
PT 100	
+/- 0.03	Deg. C
SGS	

Pressure Gauges		
22.10	Name of manufacture	MRC Hypteck
22.11	Type	Pressure indicator
22.12	Rated Accuracy	1 %
22.13	Certifying Authority	

Oxygen Analyser		
22.14	Name of manufacture	Riken Keiki
22.15	Type	RX-8000
22.15.1	What is the lowest level measurable?	0%

Fixed Gas Analyser		
22.16	Name of manufacture	Riken Keiki
22.17	Type	RKK-2002K
22.18	Are Cargo tank calibration tables available?	Yes
22.19	Name of Measuring Company	SGS
22.20	Name of Certifying Authority	DNV
22.21	Calibration calculated to cm?	Yes
22.21.1	Calibration calculated to 1/2 cm?	No
22.22	Tables established to cm?	Yes
22.22.1	Tables established to mm?	No
22.22.2	Tables established to "other" (state what other)	N/A
22.23	Are trim and list corrections available?	Yes
22.24	Are temperature corrections available?	Yes
22.25	Are float gauge tape corrections available?	NA

B23 CARGO SAMPLING

23.1	May cargo samples be obtained from the levels; top, middle and bottom in all cargo tanks?	Yes
------	---	-----

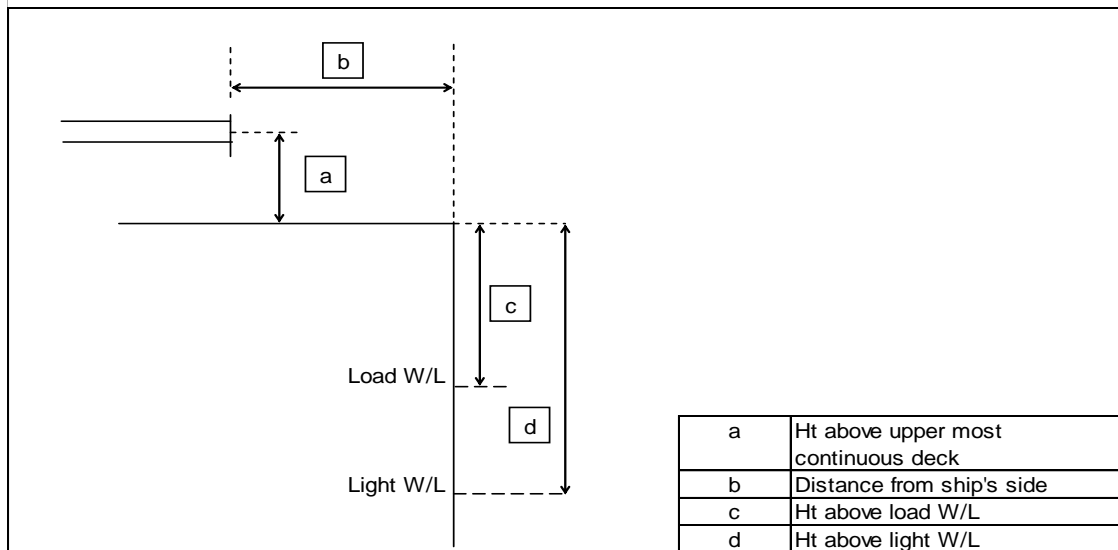
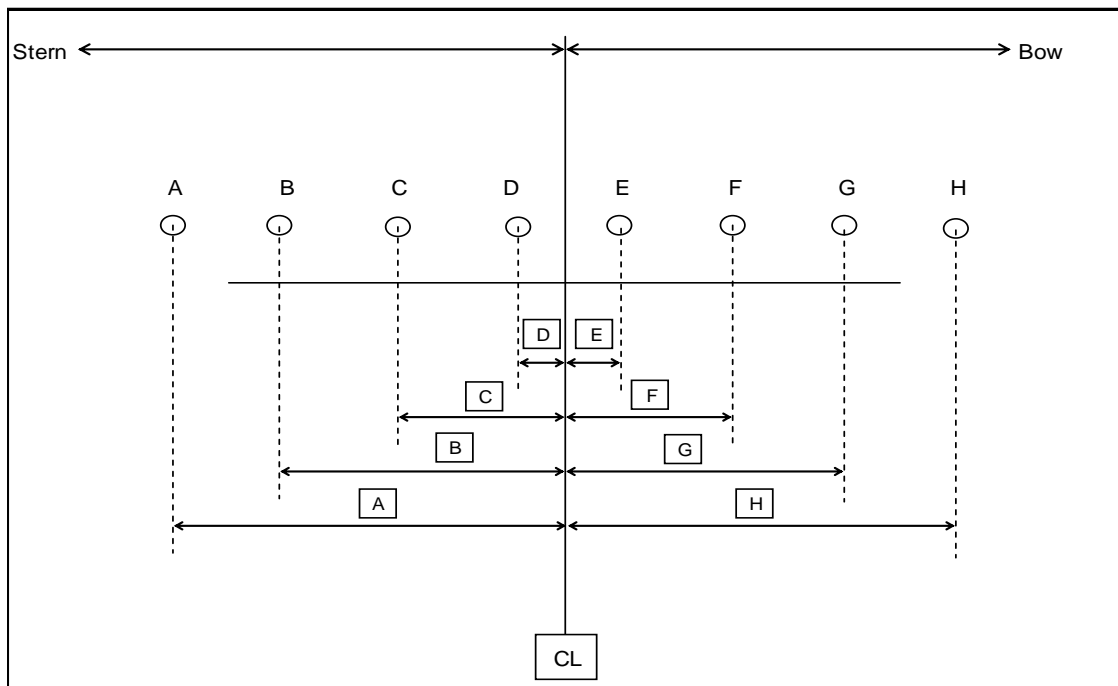
If no, - the arrangement for sampling is limited to:

Vapour sample can be taken from top, middle and bottom levels. Liquid sample can only be taken via Cargo pump on the discharge line

23.2	Can samples be drawn from tank vapour outlet?	Yes
	Can samples be drawn from manifold liquid line?	No
	Can samples be drawn from manifold vapour line?	No
	Can samples be drawn from pump discharge line?	Yes
23.3	State sample connection type	Ball valve full bore
	Size of sample connection	1/2" NPT (F)

B24 CARGO MANIFOLD

Manifold arrangement diagram



- Center of manifold to bow
- Center of manifold to stern
- Dimension A
- Dimension B
- Dimension C
- Dimension D
- Dimension E
- Dimension F
- Dimension G
- Dimension H

111.46	M.
113.76	M.
-	mm.
-	mm.
3375	mm.
1125	mm.
1125	mm.
3375	mm.
5625	mm.
7875	mm.

Pipe Flange A - duty	-	
Pipe Flange A - rating	-	bar
Pipe Flange A - size	-	mm.
Pipe Flange A raised or flat face	-	
Pipe Flange B - duty	-	
Pipe Flange B - rating	-	bar
Pipe Flange B - size	-	mm.
Pipe Flange B raised or flat face	-	
Pipe Flange C - duty	LIQUID 2	
Pipe Flange C - rating	300#	bar
Pipe Flange C - size	355.6	mm.
Pipe Flange C raised or flat face	Raised	
Pipe Flange D - duty	VAPOUR 2	
Pipe Flange D - rating	150#	bar
Pipe Flange D - size	254	mm.
Pipe Flange D raised or flat face	Raised	
Pipe Flange E - duty	VAPOUR 1	
Pipe Flange E - rating	150#	bar
Pipe Flange E - size	254	mm.
Pipe Flange E raised or flat face	Raised	
Pipe Flange F - duty	LIQUID 1	
Pipe Flange F - rating	300#	bar
Pipe Flange F - size	355.6	mm.
Pipe Flange F raised or flat face	Raised	
Pipe Flange G - duty	LIQUID 2A	
Pipe Flange G - rating	300#	bar
Pipe Flange G - size	355.6	mm.
Pipe Flange G raised or flat face	Raised	
Pipe Flange H - duty	VAPOUR 2A	
Pipe Flange H - rating	150#	bar
Pipe Flange H - size	254	mm.
Pipe Flange H raised or flat face	Raised	
Height above uppermost continuous deck	2110	mm.
Distance from ship side	4250	mm.
Height above load waterline	12310	mm.
Height above light waterline (Ballast cond.(dep))	17210	mm.

Manifold Arrangement Located on Top of Compressor

Distance from rail of compressor room/platform to presentation flanges	NA	mm.
Distance from deck of compressor room/platform/try to centre of manifold	NA	mm.

B25 CARGO MANIFOLD REDUCERS

25.1	Number of ANSI Class 300 reducers carried onboard	8	
	Flange rating of ANSI Class 300 reducer	300#	bar
	Size of ANSI Class 300 reducer	14x16, 14x12, 14x10, 14x8	inch
	Length of ANSI Class 300 reducer	645	mm.
25.2	Number of ANSI Class 300 to Class 150 reducers carried onboard	10	
	Flange rating of ANSI Class 300 to Class 150 reducer	300#,150#	bar
	Size of ANSI Class 300 to Class 150 reducer	14x16,14x14,14x12,14x10,14x8	inch
	Length of ANSI Class 300 to Class 150 reducer	645	mm.
25.3	Number of ANSI Class 150 reducers carried onboard	6	
	Flange rating of Class 150 reducer	150#	bar
	Size of ANSI Class 150 reducer	10x12,10x8,10x6	mm.
	Length of ANSI Class 150 reducer	500	mm.

B26 CONNECTIONS TO SHORE FOR ESD AND COMMUNICATIONS SYSTEMS

26.1	Is ESD connection to shore available?	Yes	
	If yes, is the system pneumatic?	No	
	If yes, is the system electrical?	Yes	
	If yes, is the system fiber optic?	-	
26.2	What is the type of connection used?	SIGGTO	
26.3	Are ESD hoses or cables available on board?	Yes	
	If yes, length of pneumatic		mm.
	If yes, length of electrical	30 meters	mm.
	If yes, length of fiber optic	-	mm.
26.4	Is there a connection available for a telephone line?	No	
26.5	Are ESD connections available on both sides of vessel?	Yes	
	Are ESD Fusible plugs fitted at tank domes?	Yes	
	Are ESD Fusible plugs fitted at manifolds?	Yes	
	Is the link compatible with the SIGTTO guidelines?	Yes	
	Type of manifold valve	Butterfly	
	Closing time in seconds	28	secs
	Is closing time adjustable?	Yes	
	Is Independent high level shut down system fitted(overflow control)?	Yes	
	If yes, does the independent high level shutdown system also switch off running cargo pumps?	Yes	
	Shut down level %	99.5	%

B27 MANIFOLD DERRICK/CRANE

27.1	Is manifold derrick provided	NA	
27.2	Is manifold crane provided	YES	
27.3	Is lifting equipment same for port and starboard?	YES	
	If no, then stipulate details	THE LOCATION IS SHIP'S CENTER	
27.4	State SWL at maximum outreach	10	Tonnes
27.4.1	Maximum outreach of lifting equipment	6.7	Metres

B28 STORES DERRICK/CRANE

28.1	State location	PORT AND STBD AFT OF ACCOM. EL. MOTOR HANDLING	
	SWL	5 / 5	Tonnes

B29 SISTER VESSEL(S)

29.1	Name of vessel	BW BALDER
		BW VAR
		BW BRAGE
		BW FREYA
		BW FRIGG