

**GAS FORM C****Main particulars****2.1 PREAMBLE**

<b>Ship's name</b>	BW PRINCESS
<b>Owners</b>	Bergesen Gas Shipping AS
<b>Flag - Registry</b>	NORWEGIAN (NIS)
<b>Builder</b>	HHI (Hyundai Heavy Industries, Ulsan, Korea)
<b>Delivery</b>	22.02.2008 Ulsan South Korea
<b>Class</b>	DNV
<b>Class notation</b>	+1A1 Tanker for Liquefied Gas OPP-F E0 NAUT-OC PLUS-1 TMON NAUTICUS, 2G (-50°C, 610 kg/m <sup>3</sup> , 0,275 bar
<b>IMO No.</b>	9353242

<b>GRT/NRT</b>	
<b>International</b>	47194 / 15954
<b>Suez</b>	50531,96 / 45507,59
<b>Panama</b>	

**2.2 HULL**

	<b>Metres</b>	<b>Feet</b>
<b>LOA</b>	225,29 mtrs	
<b>LBP</b>	215,00 mtrs	
<b>Breadth</b>	36,60 mtrs	
<b>Depth</b>	22,00 mtrs	
<b>Keel to highest point</b>	47,695 mtrs	

<b>Max summer draft</b>	12,024 M	<b>Corresponding deadweight</b>	54368 MT
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<b>TPC fully loaded</b>	70,65
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<b>Mean draft with full bunkers and full cargo</b>		
<b>Specific Gravity</b>	<b>Mean draft</b>	<b>Corresponding DW</b>
0.581	11,52 mtrs	51235 mt
0.596	11,69 mtrs	52446 mt
0.680	N/A	N/A
0.703	N/A	N/A



## LPG/C "BW PRINCESS"

Communication equipment	
International call sign	LADR7
Radio station	GMDSS
Inmarsat F -77	
- Telephone	764 816 120
- Telefax	DFAX 764 816 124
- Telex	nil
Inmarsat C	425 972 610/11
MMSI	259 726 000
Cell phone	+47 952 65 268
E-mail	bw.princess@bwgas.com

### 2.3 MACHINERY

Main Engine	
Hyundai MAN B&W	
Max Cont.	13560 kW at 105 rpm
Grade fuel used	IFO 380 cst

Auxiliaries	
Diesel	3 pcs
Make	MAN B&W Hyundai
kW/RPM	1200 kW / 720 rpm
Grade fuel used	IFO 380 cst

Speed/Consumption*	
Guaranteed average loaded/ballast speed over 12 months	
Average consumption on Main Engine guaranteed speed	
Average consumption on auxiliaries	

\*) Above based on 50/50 propane/butane and max force 5 Beaufort

Slow speed/consumption figures as guidance only	
Average loaded/ballast	Consumption
13 Knots	
14 Knots	
15 Knots	

Gas oil consumption alongside in port	
Inert gas plant when operating	
Boiler consumption	

Permanent bunkers capacity (Excl. daily service tanks)		
HFO	3375,4 m <sup>3</sup> (100 %)	3046,3 mt with sp.gr. 0.95 (95 %)
GAS OIL	319,9 m <sup>3</sup> (100 %)	246,2 mt with sp.gr. 0.81 (95 %)



2.4 CARGO INSTALLATION

Tank No.	100 % M <sup>3</sup>	98 % M <sup>3</sup>	Butane 0.596 -2°C MT	Propane0. 581 -41.5°C MT	NH <sub>3</sub> 0.680 -32°C MT	Butadiene 0.651 -5°C MT	Naphtha 0.703 30°C MT	Naphtha 0.676 30°C MT
1	17956,4	17597,3	10488	10224	N/A	N/A	N/A	N/A
2	21847,3	21410,4	12761	12439	N/A	N/A	N/A	N/A
3	21862,8	21425,5	12769	12448	N/A	N/A	N/A	N/A
4	20716,4	20302,0	12100	11796	N/A	N/A	N/A	N/A
<b>Total</b>	82382,9	80735,2	48118	46907	N/A	N/A	N/A	N/A
<b>Decktank capacity</b>					<b>402,5 cubm</b>			
<b>Transportable products and respective quantities</b>								
<i>Other transportable products:</i>								

Scantlings of the cargo tanks are based on a maximum density of cargo of kg/m<sup>3</sup>. Cargo with density up to kg/m<sup>3</sup> may be carried in the cargo tanks on the following conditions:

For density of kg/m <sup>3</sup>	N/A
For densities between and kg/m <sup>3</sup>	N/A

<b>Tank working pressure</b>	
Maximum pressure	0,400 barg (port)/0,275 barg (sea)
Minimum pressure	-0,070 barg
Minimum temperature acceptable in tanks	-50 °C

<b>Loading rate - tons/hour</b>	2200
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2.5 CARGO PUMPS

<b>Number and type</b>	600 m <sup>3</sup> /hat 140 mlc Svanehøj,
<b>Location</b>	Deepwell pumps, 2 for each cargotank,
<b>Max permissible specific gravity</b>	0,610
<b>Time for discharging full cargo using all pumps against no backpressure</b>	18 hrs
<b>Cargo remaining onboard in cargo tanks after completion pumping</b>	Total approx 60 m <sup>3</sup> (all cargotanks)
<b>Total head when working in series with booster pump</b>	230 mlc
<b>Booster pumps</b>	600 m <sup>3</sup> /h at 115 mlc

2.6 CARGO COMPRESSORS

<b>Number and type</b>	4 x Burckhardt Compression 3K140-3A
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	<b>Propane</b>	<b>Ammonia</b>
<b>Refrigeration Capacity</b>	(2,5 % Ethane) 4 x 194000 kcal/h	N/A
<b>Suction pressure</b>	0,200 bar	N/A

2.7 INERT GAS SYSTEM



## LPG/C "BW PRINCESS"

Does the vessel use inert gas?	Yes
Utilization	

Does the vessel produce inert gas?	Yes
Type	Inert Gas
Daily production	127200 m <sup>3</sup>

Composition of inert gas	
Carbon dioxide	14 %
Oxygen max.	1 %
Carbon monoxide max.	%
Hydrogen max.	%
Nitrogen	85 %
Soot	Bacharach 0
Sulphur oxides max.	1ppm
Dewpoint	-40 °C

State if any shore supply of liquid nitrogen may be required	N/A
What quantity?	

### 2.8 GAS FREEING

Can this operation be carried out at sea?	Yes
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State method incl. all details	
For LPG – Boil off/heating	24/30 hrs C3/C4
Inerting	36 hrs
Venting to entry	36 hrs
For NH <sub>3</sub>	N/A

Advise time required and consumption of inert gas if any	
From LPG about	36 hrs, 190 000 m <sup>3</sup>
From NH <sub>3</sub> about	N/A

Is the vessel equipped with inert gas blower?	Yes
Capacity	5300 m <sup>3</sup> /hrs

Ventilation fan	2 x 10000 m <sup>3</sup> /hrs
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### 2.9 CHANGING GRADE

Can this operation be carried out at sea?	LPG to NH <sub>3</sub> N/A
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State method used and time required for changing from NH<sub>3</sub> to LPG and vice versa, to reach 50 ppm of previous cargo in tanks atmosphere, the tanks being dry and free of moisture (dewpoint plus 10 °C)

From NH <sub>3</sub> to LPG	N/A
Time required	N/A

From LPG to NH <sub>3</sub>	N/A
Time required	N/A



## LPG/C "BW PRINCESS"

Can vessel reduce in tank atmosphere and gas installation concentration of previous cargo below 50 ppm?	Yes
Method used, time required and extra shore supply if any	Boil off/heating/inerting/venting
How can it be checked that no liquid gas remain onboard	Level Gauge / Temperature

### 2.10 CARGO HEATER

State discharging rate for propane with 2.5 mol % ethane to be brought from -44°C to -5°C at sea temperature of 15°C	600 m <sup>3</sup> /h
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### 2.11 CARGO VAPORIZER

In case of need of vapour gas during discharge, can vessel produce its own if no shore gas available?	Yes
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### 2.12 REFRIGERATING APPARATUS

Is it independent of cargo?	Yes
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### 2.13 MEASURING APPARATUS

What gauges onboard	Kongsberg Radar
Location and type	2 for each cargotank
Number of temperature sensors/gauges pr tank	7 – 3 each side of tank and 1 in vapour dome
Number of pressure sensors/gauges pr tank	1 in each tank

### 2.14 SAMPLES

Where can samples be taken?	Vapour – Dome / Liquid – Dome (Cargo Pump)
Are sample bottles available onboard?	Yes

### 2.15 CARGO LINES

(See also last page of this gas form C)

Distance from manifold to bow	109,28 m
Distance from manifold to stern	116,01 m
Height cargo manifold above main deck	1,625 m
Height above drip tray manifold deck	1,24 m
Height cargo manifold above Summer Draft mark	11,39 m
Height cargo manifold above waterline when in ballast	16,60 m
Height cargo manifold above waterline when loaded (gas)	12,22 m
Distance manifold from ship's rail	4,12 m
Distance between loading and vapour return connections	2,25 m
Windage area in normal ballast condition	3946 m <sup>2</sup>
Is vessel fitted with SPM chainstopper, suitable for 76 mm chain.	Yes
Is vessel fitted with cruziform bollards/fairleads/eye-pads in manifold area	Yes



## LPG/C "BW PRINCESS"

Dimension of lines		
	Diameter	Flange size
Liquid	350 mm	" ASA 300
Vapour	250 mm	" ASA 150
Booster	350 mm	" ASA 300

What reducers onboard			
Number	Diameter	Length	Pressure rating
2	14"-16"	64,5 cm	ASA 300
2	14"-12"	60,5 cm	ASA 300
2	14"-10"	59,5 cm	ASA 300
2	14"- 8"	59,5 cm	ASA 300
2	14"-16"	62,0 cm	ASA 300 - ASA 150
2	14"-14"	50,0 cm	ASA 300 – ASA 150
2	14"-12"	59,0 cm	ASA 300 – ASA 150
2	14"-10"	58,5 cm	ASA 300 – ASA 150
2	14"- 8"	59,0 cm	ASA 300 – ASA 150
2	12"– 10"	50,0 cm	ASA 150
2	10"– 8"	50,0 cm	ASA 150
2	10"- 6"	50,0 cm	ASA 150
1	8"- 12"	50,0 cm	ASA 150
1	8" – 10"	50,0 cm	ASA 150
1	8" – 8"	50, 0 cm	ASA 150
1	6" – 8"	50,0 cm	ASA 150

### 2.16 LIFTING DEVICE

Where situated	Aft	Amidship
Number and type	2 TTS Hydraulic	1 TTS Hydraulic
Lifting capacity	5 tons	10 tons
Max. distance from ship's side of lifting hook	Port 4,0 mtrs Stb. 6,0 mtrs	6,2 mtrs

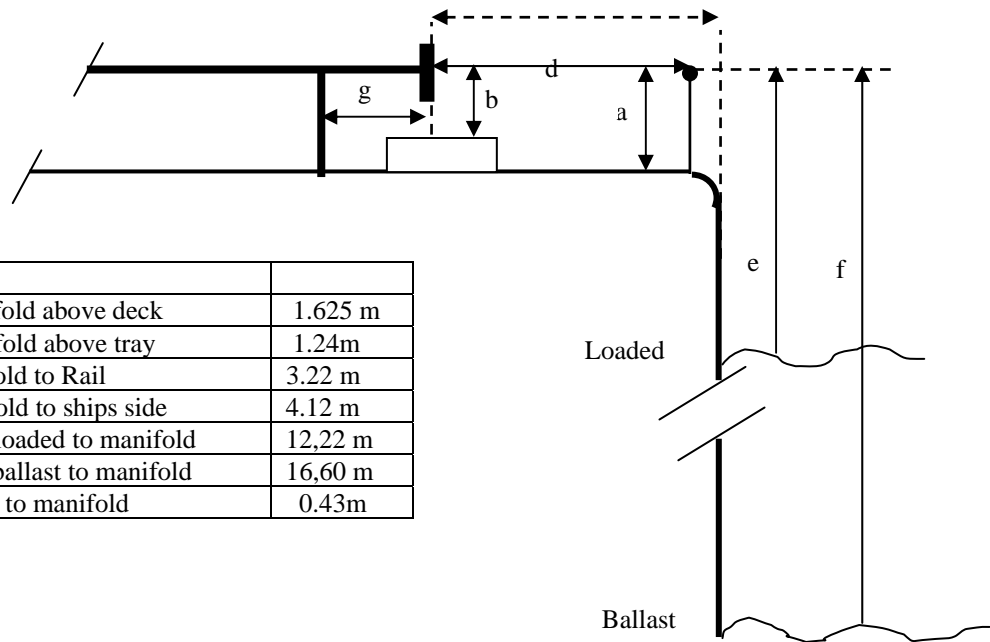
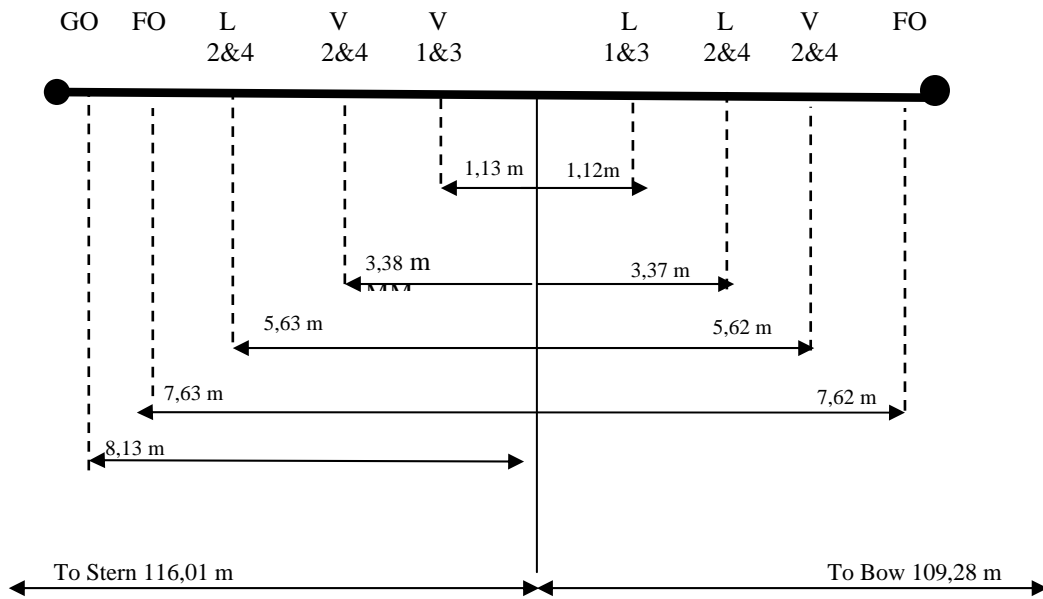
### 2.17 SPECIAL FACILITIES

How many grades can vessel segregate?	2
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Indicate systems	(1+3) & (2+4) or (1+3+4) & (2)
Is vessel able to load/discharge two or more grades simultaneously?	Yes
Can vessel sail with slack tanks?	Yes
Is vessel fitted with purge tank?	Yes



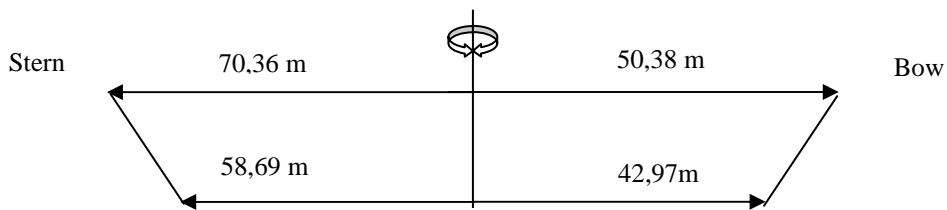
**ARRANGEMENT OF CARGO MANIFOLD**



a) Height of manifold above deck	1.625 m
b) Height of manifold above tray	1.24m
c) Distance manifold to Rail	3.22 m
d) Distance manifold to ships side	4.12 m
e) Dist. waterline loaded to manifold	12,22 m
f) Dist. waterline ballast to manifold	16,60 m
g) Dist. 1 <sup>st</sup> stander to manifold	0.43m

**PARALLEL BODY LENGHT**

**LOADED CONDITION**



**BALLASTED CONDITION**



# LPG/C “BW PRINCESS”