

VESSEL PARTICULARS (FORM C)
LPG/C GAS SINCERITY
(last updated 27/05/2010)

Specifications of the vessel and the gas installation which are representations by the Owners.

(A) VESSEL'S CHARACTERISTICS

PREAMBLE

Name : **GAS SINCERITY**
Owner : **SOLEIL TRUST INC.**
Flag : **PANAMA**
Build : **WATANABE SHIPBUILDING CO.,LTD.**
Date on Service : **13 JULY 2000**
Class : **Lloyd's**

GRT International : **3818 T** Suez : **4225.14 T**
Panama : **3266 T**

NRT International : **1146** Suez :
Panama :

Is vessel build according to USCG regulations? : **Yes**
RINA regulations? : **N/A**
Japanese regulation? : **N/A**

Has vessel received USCG approval? : **Yes**
RINA approval? : **N/A**

HULL

LOA : **99.97 M**
LBP : **94.70 M**
Breadth : **16.80 M**
Depth : **7.50 M**
Summer Draft : **5.364 M corresponding to Summer DWT = 3847.11 MT**
Multiple Draft : **N/A M corresponding to Multiple DWT = N/A**

Estimated draft with full cargo and full bunkers are as follows.

Product	Draft Fore' (m)	Draft Aft' (m)	Draft Mean (m)	Corresponding Deadweight (t)
Propane (98%)	3.72	5.93	4.83	5539.97
Butadiene (98%)	4.20	6.17	5.19	6026.59
VCM (98%)	4.29	6.39	5.34	6234.05

Propeller immersion :

At draft Aft 5.93 m correspond. :109.71%
At draft Aft 6.17 m correspond. : 116.76%
At draft Aft 6.39 m correspond. : 123.24%

COMMUNICATION EQUIPMENT

Call letter	:	H3JE
Radio Station normally watched	:	GMDSS
Radio MF/HF NBDP	:	FITTED
Radio MF/HFTEL/DSC	:	FITTED
VHF	:	FITTED
Satellite Communication		
Inmarsat 'C'	:	4354225510
Inmarsat 'Flt 33'	:	764818872/73
	:	
	:	

MACHINERY

Main Engine x 1	.	Type and make	:	AKASAKA-MITSUBISHI UE DIESEL ENGINE 6UEC37LA
	.	Service power	:	4200 PS x 210 RPM
		No of Cylinders		6
		Cyl Bore x Stroke		370 X 880
	.	Grade of fuel used	:	380 CST @ 50 deg.C
Auxiliaries		Type and make (Electrical)		YANMAR SI65L – UN 265 KW
		(Mechanical)		400 KVA x 445V , 60HZ x 2 SETS
		Grade of fuel used		Diesel Oil
		No off		
Emergency Gen		Type		YANMAR
		No off		
Bow Thruster		Type : Power:		KAMOME TCA-60MA 308KW , (rpm 1,765)
Boiler		Type		WATER TUBE
		Evaporation		538 kg/h
		Max Design Pressure		0.7 Mpa
		Feed Water Temp		85 ~ 90 deg.C.
		No off		1
Exhaust Economiser		Type		FORCE CICULATING TYPE MULTITUDINOUS TUBE (FINE TUBE)
		Evaporation		400 kg/h
		No off		
Air Compressors (Main)		Type / Capacity		VERTICAL 2-STAGE / 53.0m3/h (Direct Drive)
		No off		2 sets
Air Compressors (Emergency)		Type		DIESEL DRIVEN / 6.3 m3/h
		No off		1 SET
Fuel Oil Purifier		Type		SELF JECTOR (SJ-15F) SERIES
		No off		3 SETS

	Capacity	FO- (C) – 1299 l/h D.O.(A) – 4350 l/h
Lub Oil Purifier	Type	SELF JECTOR (SJ-15F) SERIES
	No off	1 INIT
	Capacity	1700~ 2850 L/H
Evaporator	Type	WM-10M
	Capacity	10 T/DAY
Fresh Water Sterilizer	Type	USS-1K
	Capacity	1000 L/H
Fresh Water Mineraliser	Type / Capacity	N/A
Waste Oil Incinerator (IMO MEPC 76 (40))	Type	BGW-20N
	Capacity	WASTE OIL-25.0KG/H / SOLID WASTE 20 KG/H
Oily Water Separator	Type	USC – 10
	Capacity	1 m3/H
Sewage Treatment plant	Type	SBT-25
	Capacity	25 PERSON / DAY
Hot Water Set (Calorifier unit)	No off	1 SET / CFL-2000-5
Steering Gear	Type	RV21-017 (ELECTRO HYDRAULIC)
	Duty Capacity	170 KN-M
	Hydraulic pump unit	LVP017-210ROL (2 SETS)(BENT AXIS TYPE AXIAL PISTON PUMP)

Speed

I Up to and Beaufort Scale 4 Douglas Sea state 3

About 13.5 KNOTS Ballast/Laden

CONSUMPTION/ DAY

At Sea

Main Engine	HFO	About 12.0 MT/Day	Ballast/Laden
Auxiliary Engine	MGO	About 1.0 MT/Day	
In Port	MGO	About 1.0 MT/Day	Idle
	MGO	About 2.2 MT/Day	Discharging

Permanent bunker capacity (100%)

HFO	: About 569.86 m3
Diesel	: About 111.83 m3
Fresh Water	: 163.16m3

3.7 Hydrostatic Test Pressure : **26.48 bar g (2.648 MPag)**

4. LOADING RATE (TONS/HOUR) – For Full Cargo Parcels

Ex-atmospheric storage with gas : 1 tank : **204 tons/h Butane 0-30 deg.C**

Return : 2 tanks :

Remarks:

* Based on maximum velocity of 6.5 metres/sec except VCM, and 4.0 meters/sec for VCM in the liquid piping.

* If cargo temperature is less than 0 °C, shore heater to be used. If ship heater used, max rate is **190 m³** per hour.

* Loading by shore pump only, proper size gas return line to be connected

* Subject to both ship and shore tanks being under favourable conditions

5. CARGO PUMPS

- 5.1 Type : **2 fixed deep well**
Make : **Teikoku Machinery Works**
How many : **1 pump each**
Maximum specific gravity : **0.948**
- 5.2 Capacity (CMB/Hour) : **300 m3/h (SG.0674) (LPG)110 mtrs / 250 m3h (SG.0.944) (VCM) 120 mtrs**
Two speed or variable speed : **One speed**
Rated kW (each)
Working pressure maximum :
- 5.3 Location : **Tank 1 & 2**
Removable : **NA**
- 5.4 Booster pumps : **N/A**
Type : **N/A**
Maker : **N/A**
- 5.5 Capacity (CMB/Hour) : **N/A**
Working pressure : **N/A**
- 5.6 Location : **N/A**
- 5.7 Time to discharge a full liquid cargo using all pumps against back pressure at pump
1 bar : **about 11 hours for LPG**
5 bars : **about 20hours for LPG**
10 bars : **-----**
- 5.8 Nominal back pressure when working : **about 1 bar**
In series corresponding head : **N/A**
Maximum back pressure : **about 5 bar**
Nominal pressure at rail (propane) : **about 13 bar at 20 degree C of cargo temperature**
- 5.9 What amount of cargo remains in tanks after completion pumping before stripping:
- liquid : **about per one tank /N/A**
- vapour : **about ton per one tank for LPG N/A**

6. STRIPPING

6.1 Stripping system, if any : **N/A**

6.2 Time required to remove all traces of liquid cargo as stated in 5.9 for:

- LPG : **about hours / N/A**

7. CARGO COMPRESSORS

7.1 Type : **Reciprocated, Oil Free**
Make : **TANABE PNEUMATIC MACHINERY CO.**
How many : **2**
Piston displacement
Rated Kw : **37KW**
Stroke : **177.8 MM**
Max discharge pressure : **19.62 BAR**
Pressure differential

No of Revolutions : **540 RPM**

7.2 Are compressors oil free : **Yes**

7.3 Can they reliquefy VCM without risk : **No**

7.4 State time to bring full cargo of butane to atmospheric pressure from :

8. INERT GAS SYSTEM / N2 GENERATOR : **N/A**

8.1 Does the vessel use inert gas? : **N/A**
If so, state utilization and quantities : **N/A**

8.2 Can the vessel produce inert gas? : **N/A**
If so, state type and composition of gas produce: **N/A**

Discharge Capacity

8.3 Maximum production obtainable : **N/A**

NOTE:- Above quantities obtained at engine room temperature 45° C

8.4 State if there are storage facilities for inert gas onboard: **N/A**

- Size : **N/A**
- Pressure : **N/A**

8.5 State if any shore supply of nitrogen may be required: : **Yes**
- for what purpose : **Gas Free/ DD/Change of Cargo**
- what quantities : **TBA**

9. GAS FREEING

9.1 State method used giving all details : **Nitrogen Plant / Fans**

9.2 State time required including stripping : **TBA**

10. CHANGING GRADE

10.1 From completion discharge of cargo Propane, time required in hours and inert gas in CBM required to reach a tank and gas installation atmosphere of less than 100 ppm of Propane in Vapour phase.

Time required: TBA

10.2 Can this operation be carried out at sea? : **NO**

10.3 Can the ship measure the number of ppm in vapour phase? : **YES**

10.4 Has vessel deck tank for changing grade/cooling operations? : **NO**

10.5 Deck tanks : **N/A**
Capacity : **N/A**
Purpose : **N/A**

11. COOLING BEFORE LOADING : N/A

12. CARGO HEATER

12.1 Type : **S-321 / KL33-SR**
12.2 Inside Diameter **276 MM**
12.3 Overall length **4746 MM**
12.4 Cargo flow rate **190 M3/H**
12.5 Min Inlet Temp **LESS THAN 0 DEG.**
12.6 Min Outlet Temp **+ 2 DEG**
12.7 Required Sea water Capacity **500 M3/H**
12.8 Design Pressure **1.96 MPA / SHELL SIDE**
12.9 Hydrostatic Test Pressure **2.94 MPA / SHELL SIDE**
12.10 Tightness Test Pressure **2.16 MPA / SHELL SIDE**

12.0 State discharging rate for propane to be brought from atmospheric pressure
Loading rate for Propane – ° C / 0° C: **about 150 Mt/hr**

13. CARGO VAPORIZER

In case vapour gas is needed to feed compressors, can vessel produce its own if no shore available:

NIL

14. REFRIGERATING APPARATUS NA

14.1 Is it independent of cargo? : **NA**
Is so, state cooling agents : **NA**

14.2 What minimum temperature can be maintained : **NA**

14.3 What time required at sea to lower by 1°C the full cargo of : **NA**

15. MEASURING APPARATUS

What gauges on board? **ONE FLOAT GAUGE WITH REMOTE FIXED IN EACH TANK AND 5 SLIP TUBES TYPE LEVEL GAUGE IN EACH TANK.**

Type :
Location : **LOCATION OF INDICATION AT BOTH ON TANK DOME AND CARGO MONITORING IN CARGO CONTROL ROOM.**

16. SAMPLES

- 16.1 State how tank atmosphere samples can be taken and where from? MID ,TOP.BOTTOM.
Line.
- Standard of fitting? : 3/8 INCHES COUPLING
- 16.2 Same question for cargo : **TBA**
- 16.3 Are sample bottles available on board? : **No**

17. CARGO LINES

- 17.1 Is ship fitted with a port and starboard cargo manifold? : **Yes**
- 17.2 Position of cargo manifold
- distance from stern (AP) (S / P) : **52.76 M**
 - distance form stem (FP) (S / P) : **47.21 M**
 - height above deck : **1.05 m for Liquid manifold**
 - distance from ship's rail : **2.20 M**
 - underside keel to manifold : **7.50 M**
- 17.3 Liquid line
- flange-size : **8 in.**
 - type : **ANSI / # 900**
- Gas line
- flange-size : **6 in.**
 - type : **ANSI / # 900**
- 17.4 What reducers on board? :
- For Liquid line (low temperature) 8/6 , 8/5,8/4,8/3 (INCHES)**
- For Vapor line (normal temp.) 6/5 , 4/5,3/5 (INCHES)**
- 17.5 Is ship fitted with stern discharge? **No**
- Liquid line - diameter : **N/A**
 - flange – size : **N/A**
 - type : **N/A**

18. HOSES

- Are serviceable hoses available on board? : **YES**
- 18.1 :
- Length : **2 SETS 50 FT.**
 - Diameter : **4 INCHES / 2 INCHES**
 - Flange-size : **4" / 2"**
 - Type : **N/A**
 - Bending radius : **N/A**
- 18.2 Minimum temperature acceptable : **0 DEG.CENT**
- Maximum pressure acceptable : **350 PSI**
- 18.3 For what products are hoses suitable? :

19. DERRICKS

- Hose cranes : **Yes**
- Where situated : **Center Between Cargo Tanks No.1 &2**
- Lifting capacity : **3.5 Tons**
- Working radius : **12 M**

20. SPECIAL FACILITIES

- 20.1 How many grades can be segregated? : **No Segregation/ 1 common line loading.**
- 20.2 How many cooled? : **N/A**
- 20.3 Can vessel sail with slack cargo tanks? : **Yes**