
lpg carrier M/V Matthew

FORM C GAS

Details given are believed to be correct but not guaranteed

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A1 PRINCIPAL SHIP PARTICULARS

1.1	Name of Ship	Matthew
1.2	Previous Name(s)	Taygete Star
1.3	Builder	MADENCI SHIPYARD EREGLI TURKEY
1.4	Date of delivery	JANUARY 2007
1.5	Classification Society and No.	RINA + ABS
1.6	Gross Registered Tonnage	3430
1.7	Net registered Tonnage	1029
1.8	Suez Tonnage Gross/Net	
1.9	Panama tonnage Gross/Net	
1.10	Registered Owner	LONDON BRIDGE Limited – MARSHALL ISLANDS
	Address	
	Telephone	
	Telex/fax	
1.11	Manager or Operator	LUMASHIP S.r.l.
	Address	Via G. Porzio, 4 Centro Direzionale Isola E2 Scala B - 80143 Napoli (Italy)
	Telephone	0039 081 19570961
	Telex/fax	0039 081 19565840
1.12	Flag	PORTUGUESE
1.13	Port of registry	MADEIRA
1.14	Official No.	TBN
1.15	Call Sign	TBN
1.16	Immarsat No.	764606398/F399
1.17	LR/IMO No.	9356921
1.18	Was the ship built in accordance with the following regulations	
	IMO	YES
	USCG	YES
	RINA	YES
	OTHER	NA
1.19	IMO Certification	
	Certificate of Fitness IGC	YES
	A328	NA
	A329	NA
	Letter of Compliance	NA
1.20	Date questionnaire compiled	01/04/2011

A2 HULL DIMENSIONS

2.1	Length overall	88,4 m
2.2	Length between perpendiculars	82,5 m
2.3	Extreme breadth	14,8 m
2.4	Extreme depth	7,8 m
2.5	Summer draught	6,5 m
2.6	Corresponding deadweight	3811 t
2.7	Load displacement	
2.8	Load displacement (summer)	6021 t
2.9	Cargo tank cubic capacity (100%)	3315,17
2.10	Distance from keel to top antenna	32
2.11	Air draught (with normal ballast)	27

A3 BALLAST PARTICULARS

3.1	Permanent Ballast		YES
3.2	Ballast quantity		1700 t sea water
3.3	Bunkers, stores, etc.		498,56 t
3.4	Draught	- Forward	4,477 m
		- Aft	5,321 m
		- Mean	4,899 m

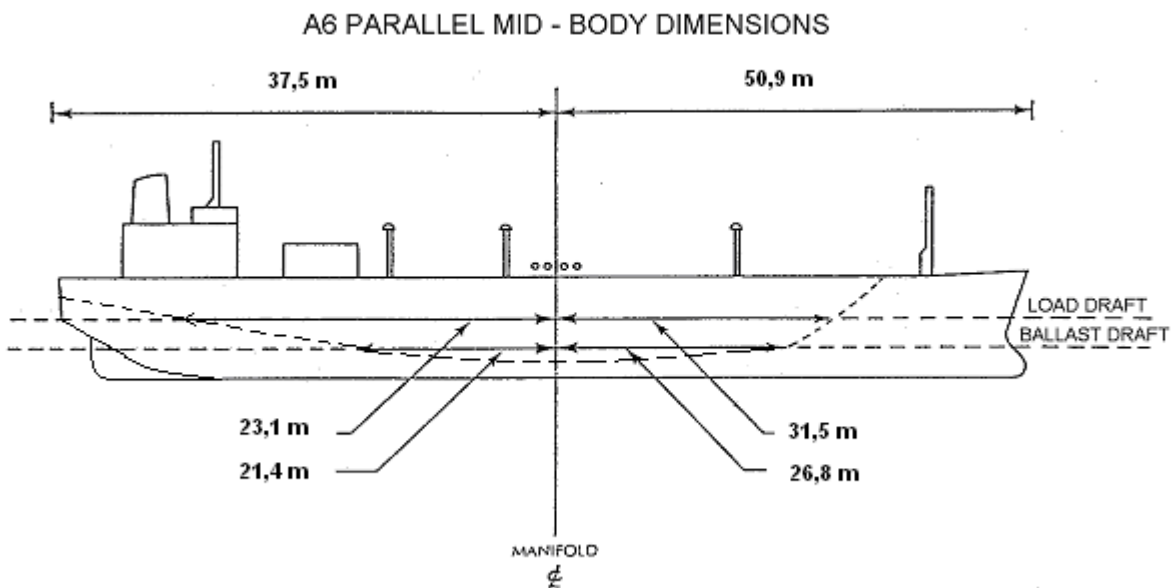
A4 IMMERSION

4.1	TPC at normal draught	10
4.2	TPC at loaded draught	11

A5 LOADED PARTICULARS

5.1	Cargo		propane	Vcm
5.2	Density		0,583	0,972
5.3	Cargo	tons	1893,78	3157,41
5.4	Bunkers	IFO	304,19	304,19
5.5	GASOIL		79,46	79,46
5.6	Fresh water		97,83	97,83
5.7	Stores/spares			
5.8	Lub oil		17,07	17,07
5.9	Ballast		269,75	115,24
5.10	Deadweight		2662,09	3771,21
5.11	Draught	- Forward	5,166	6,455
		- Aft	5,875	6,545
		- Mean	5,52	6,5

A6 PARALLEL MID-BODY DIMENSIONS



A7 BUNKER CAPACITIES

7.1	M.E. Fuel Oil	Grade	IFO 180CST
		Capacity 98%	333,78 CBM
7.2	Diesel Oil	Grade	GASOIL
		Capacity 98%	96,52 CBM

A8 FUEL CONSUMPTION DETAILS

8.1	At sea (normal service speed)	FO	11	ton/day
		GO		ton/day
8.2	At sea (normal service speed) while conditioning cargo	FO	12	ton/day
		GO		ton/day
8.3	In port, loading	FO	2,5	ton/day
		GO		ton/day
8.4	In port, discharging	FO	2,5	ton/day
		GO		ton/day
8.5	In port, idle	FO	0,5	ton/day
		GO		ton/day

A9 MAIN ENGINE PARTICULARS

9.1	Main engine make and type	MAN B&W TYPE 6L 27/38
9.2	No. of units	1
9.3	Maximum continuous rating (MCR) per engine	2040 KW
9.4	Total available power	2040 KW AT 800 RPM
9.5	Normal service power (ECR)	1836 KW

A10 AUXILIARY PLANT

10.1	Make and type of auxiliary generators	YANMAR TYPE 6L 165 L-EN
10.2	No. of units	3
10.3	Maximum generator output per unit	Kw 360
10.4	Shaft generator	Kw 650
10.5	Emergency generator	Kw 124
10.6	Total available power	Kw 1730 + 124 Kw emerg.

A11 POWER/SPEED INFORMATION

11.1	Trial data	BHP	
		MCR	2040 Kw
		Speed	
		Draught	5,5 m
11.2	Normal service speed	BHP	
		90% MCR	1836 Kw
		Speed	12,75 Knots
		Draught	5,5 m

A12 THRUSTERS

12.1	Make and type	ROLLSROYCE TYPE TT 1100Aux Cp – Motor ABB M2FA 315 LA 4
12.2	No. Installed	1
12.3	Location and rated bollard pull	FWD 400 KW / 1755 rpm

A13 FRESH WATER

13.1	Capacity of distilled tanks	Cbm 11,95
13.2	Capacity of domestic tanks	Cbm 87,88
13.3	Daily consumption distilled domestic	tons 0,2 Tons 4
13.4	Daily evaporator production	Tons 5

A14 BALLAST CAPACITIES AND PUMPS

Fill the following table

	Tank	Capacity	CBM 100%	CBM 98%
14.1	Fore peak		149	146
14.2	Wing or side tanks		1447	1418
14.3	Double bottoms		NO	NO
14.4	Aft peak		10	10

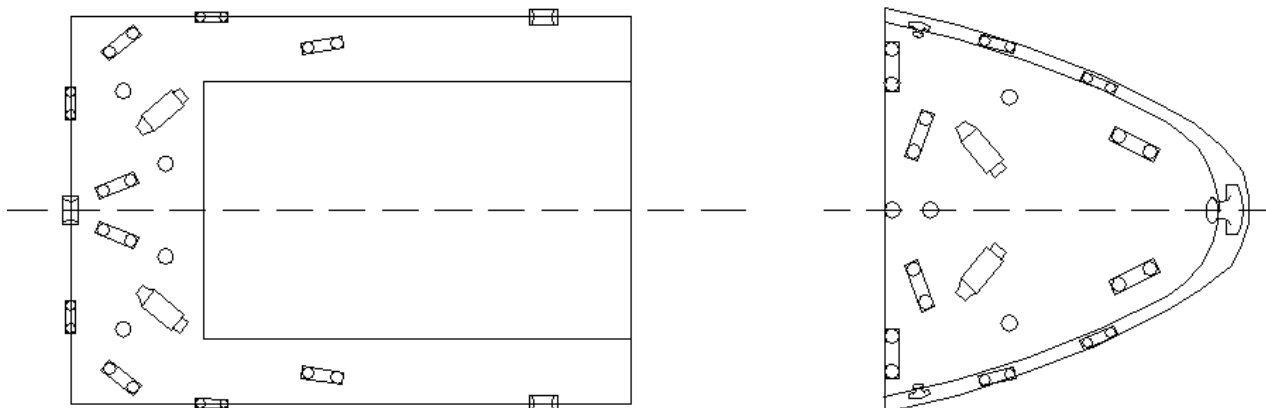
GENERAL INFORMATION

14.5		Other (DB no. 1 CN)	59	58
14.6			Total	1665
14.7	Ballast pump make and type	GARBARINO TYPE MU 125/315 LE – MOTOR Kw 52		1632
14.8	No. of Pumps	3		
14.9	Total capacity	250 cbm/hr/each		
14.10	Location	ENGINE ROOM		
14.11	Control Location	LOCAL REMOTE /BRIDGE		

A15 MOORING EQUIPMENT

15.1 Ropes and Wires.

On the diagram below indicate the position of winch mounted wires(W) and ropes (R) together with open (O) and closed (C) fairleads.



15.2 Mooring Winches

	No	Motive power (steam,hydraulic)	Heaving power	Brake Capacity	Hauling speed
Forecastle	2	HYDRAULIC		150 KN	8 m/min
Poop	2	HYDRAULIC		151 KN	8 m/min

15.3 Anchors and Windlasses

Windlass motive Power (steam, hydraulic)	Hydraulic
Hauling power	Tonnes
Brake holding capacity	Tonnes
Date of last test	

Anchor type	HULL
Weight	1315 Kg
Is spare carried	No
Cable diameter	38 mm
No of shackles port	9
No of shackles starboard	8

15.4

Windage	
Windage on ballast draught	M 778
Windage full loaded	M 646

A16 NAVIGATIONAL EQUIPMENT

Is the following equipment fitted :

16.1	Magnetic compass	YES	
16.2	Gyro compass and repeaters	YES	
16.3	Radars	YES	
16.4	Radar plotting equipment	YES	
16.5	Arpa	YES	
16.6	Echo sounder	YES	
16.7	Speed/Distance indicator	YES	
16.8	Doppler log		NO
16.9	Rudder angle, RPM, controllable pitch and Thrusters indicators	YES	
16.10	Rate of turn indicator	YES	
16.11	Radio D.F.		NO
16.12	Navtex receivers	YES	
16.13	Satellite navigator (GPS)	YES	
16.14	Decca navigator		NO
16.15	Loran C		NO
16.16	Sextants	YES	
16.17	Signal lamp (aldis)	YES	
16.18	Course recorder	YES	
16.19	Engine order printer	NA	
16.20	What chart outfit coverage is provided if limited, indicate areas covered	Mediterranean to North Sea	
16.21	Formal chart correction system in use	YES	

A17 COMMUNICATION EQUIPMENT

Is the following equipment fitted :

	YES	NO
17.1 Is ship with GMDSS	YES	
17.2 Radio telegraph main transmitter including facility to transmit on radio telephone distress frequency	YES	
17.3 Radio telegraph main receiver including facility to receive on radio telephone distress frequency	YES	
17.4 Radio telephone distress frequency watch receiver	YES	
17.5 Main radio antenna	YES	
17.6 Radio telegraph reserve transmitter	YES	
17.7 Radio telegraph reserve receiver	YES	
17.8 Reserve radio antenna	YES	
17.9 Are the main and reserve installation electrically separate and electrically independent of each other	YES	
17.10 Radio telegraph auto alarm	YES	
17.11 2182 KHZ bridge watch receiver	YES	
17.12 Alarm signal generating device	YES	
17.13 VHF radio	YES	
17.14 Inmarsat satellite communications system if yes, state identification number	YES	
17.15 Telex if yes, state identification number	NO	
17.16 Telex if yes, state identification number		
17.17 Weatherfax	YES	
17.18 Epirbs	YES	
17.19 At least three survival craft two-way radio telephone apparatus	YES	
17.20 Emergency lifeboat transmitter		NO
17.21 Full set of publications	YES	
17.22 Satellite Epirb	YES	
17.23 VHF Epirb		NO
17.24 Radio transponder for survival craft	YES	

SECTION
B

B1 CARGO - GENERAL INFORMATION

- 1.1 List products which the ship is certified to carry ACETALDEIDE, ANHYDROUSAMMONIA, BUTADIENE, BUTYLENES, BUTANES, LPG MIX, PROPANE, PROPYLENE, VCM
- 1.2 Minimum allowable tank temp. MINUS48 °C
- 1.3 Maximum permissible tank pressure 9,97 BARS
- 1.4 List grades which can be transported simultaneously TWO GRADES BUT ONLY ONE REFRIGERATED
- 1.5 List grades which can be loaded or discharged simultaneously TWO
- 1.6 State natural tank segregation. (N.B. separation obtained by the removal of spools or by insertion of blind flange) TWO – BOTH SYSTEMS
- 1.7 Number of products, (gas) that can be conditioned by reliquefaction simultaneously. ONE

B2 CARGO TANKS

- 2.1 No. and type of cargo tanks TWO LOBE TANKS DIN 13 MN NI 63 – 100 mm insulation
- 2.2 Maximum allowable relief valve setting 10 BARS
- 2.3 Safety valve set pressure - if give range for pilot valve variable PILOT SET AT 7 AND 3 bar
- 2.4 Maximum vacuum 0,5 00 Barg abs
- 2.5 Maximum cargo density 0,972 t / cbm
- 2.6 Maximum rate of cool-down 10 °C/hr
- 2.7 State any limitations regarding partially filled tanks No limitations
- 2.8 State allowable combinations of filled and empty tanks All combinations

B3 CARGO TANK CAPACITIES

Complete the following table

TANK	Capacity CBM		PROPANE	AMMONIA	BUTANE	VCM
	100%	98%	Tonnes -42.8°C	Tonnes -33°C	Tonnes -0,5°C	Tonnes -13,4°C
1	1613,82	1581,54	922,03	1075,5	948	1532,5
2	1747,48	1712,53	998,4	1164,5	1027,5	1659,4
3						
4						
5						
6						
TOTALS	3361,3	3294,07	1920,5	2240	1975	3192

B4 LOADING RATES

	PRODUCT	RATE (Tonnes/hr)	
		With vapour return	Without return
4.1	From refrigerated storage		
4.2	BUTANE	250	250
4.3	PROPANE	250	250
4.4	AMMONIA	250	250
4.5	PROPYLENE	250	250
4.6			
4.7			
	PRODUCT	RATE (Tonnes/hr)	
		With vapour return	Without return
4.8	From pressure storage		
4.9	BUTANE 30°C	250	200
4.10	PROPANE 0°C	250	180
4.11	10° C	250	150
4.12	20° C	250	120
4.13	30° C	250	100

B5 DISCHARGING - GENERAL

Cargo pumps

5.1	Type of pumps	SVANEHOJ
5.2	Number per tank	1
5.3	Rate (per pump)	300 cbm / h
5.4	Delivery head	110 m
5.5	Maximum density	0.972 t / cbm
	Booster pumps	
5.6	Type of pump	SVANEHOJ
5.7	Number	1
5.8	Rate (per pump)	200 cbm / h
5.9	Delivery head	90 m
5.10	Maximum density	0,8 t / cbm

B6 DISCHARGE PERFORMANCES

Full cargo discharge times (using all main pumps)

	MANIFOLD BACK PRESSURE	Hours	
		With vapour return	Without return
6.1 From refrigerated			
6.2	1 bar	6	6
6.3	5 bar	8	8
6.4	10 bar	10	10
<hr/>			
	MANIFOLD BACK PRESSURE	Hours	
		With vapour return	Without return
6.5 Pressurized			
6.6	1 bar	8	8
6.7	5 bar	10	10
6.8	10 bar	12	12

B7 UNPUMPABLES

	TANK NO.	1	2	3	4	5	6	TOTAL TONNES
7.1	Vapour							
7.2	Liquid	0	0					0
7.3							Total quantity	

B8 VAPORISING UNPUMPABLES

- 8.1 Process used
Time to vaporise liquid un pumpables remaining after full cargo discharge :
- 8.2 - Propane - Hrs 2
- 8.3 - Butane - Hrs 2
- 8.4 - Ammonia - Hrs 2
- 8.5 - - Hrs
- 8.6 - - hrs
- 8.7 - - hrs

B9 RELIQUEFACTION PLANT

- 9.1 Plant design conditions
Air temperature +48 °C
Sea temperature +32° C
- Plant type :
- 9.2 Single stage/direct yes no X
- 9.3 Two stage/direct X yes no
- 9.4 Simple cascade yes no X
- 9.5 Coolant type WATER
- Compressors Burckhardt
- 9.6 Type 2 K120 -2A
- 9.7 Number 2
- 9.8 Capacity (per unit) 380 cbm / h
- 9.9 Are they oil-free NO

B10 COOLING CAPACITY

State cooling capacity (in Kcal/hr) for :

10.1	Propane	@ -42°C	Kcal/hr
10.2		@ -20°C	Kcal/hr
10.3		@ - 5°C	Kcal/hr
10.4	Butane	@ - 5°C	Kcal/hr
10.5		@ 0°C	Kcal/hr
10.6		@ 0°C	Kcal/hr

B11 CARGO TEMPERATURE LOWERING CAPABILITY (AT SEA)

Time taken to lower the temperature of:			SEA WATER 15°C	SEA WATER 32°C
11.1	Propane from	°C to -42°C	Hrs 75	100
11.2		-5°C to -42°C	Hrs 70	95
11.3		-38°C to -42°C	Hrs 20	25
11.4		+20°C to -0.5°C	Hrs 15	20
11.5		+10°C to -0.5°C	Hrs 10	15
11.6	Butane from	+20°C to -0.5°C	Hrs 20	25
11.7		+ 10°C to -0.5°C	Hrs 12	17
11.8		+10°C to -5°C	Hrs 22	27
11.9	from	to	Hrs	
11.10	from	to	Hrs	

B12 INERT GAS (NITROGEN GENERATOR)

Main inert gas and nitrogen plant

12.1	Type of system	
12.2	Capacity	Cbm/hr
12.3	Composition of inert gas	
12.4	Dewpoint	°C
12.5	Used for	
	Nitrogen	
12.6	No of bottles	
12.7	Capacity (each one)	Ltrs
12.8	Used for	

B13 CARGO TANK INERTING/DE-INERTING

13.1	Time taken from fresh air to under 5% O ₂ at -25°C dewpoint	10 hrs
	Time taken from cargo vapour to fully inert at -25°C dewpoint	
13.2	When : Inert gas density less than product	Hrs
	Inert gas density greater than product	Hrs

B14 GAS FREEING TO FRESH AIR

14.1	Plant used	
14.2	Time taken from fully inerted condition to fully breathable fresh air	10 hrs

B15 CHANGING CARGO GRADES

In this table write down time to change products (in hrs). Write also consumption of nitrogen.

	From To	PROPANE TIME/CONS.	BUTANE TIME/CONS.	PROPYLENE TIME/CONS.	AMMONIA TIME/CONS.	VCM TIME/CONS.
	PROPANE	XXXXXXXXXX				
	BUTANE		XXXXXXXXXX			
	PROPYLENE			XXXXXXXXXX		
	AMMONIA				XXXXXXXXXXXX	
	VCM					XXXXXXXXXXXX

B16 DECK TANK CAPACITY (N.A.)

16.1	Propane capacity	Cbm
16.2	Butane capacity	Cbm
16.3	Ammonia capacity	Cbm
16.4	Nitrogen capacity	Cbm

B17 PRE-LOADING COOLDOWN

In the table below, show time and quantity of coolant required to cooldown cargo tanks from ambient temperature and fully gassed up state sufficient to allow loading to commence.

	PRODUCT	QUANTITY REQUIRED	TIME	
			With return line	Without return
17.1	ETHYLENE	n.a.		
17.2	PROPANE	30 t	10	12
17.3	BUTANE	10 t	10	12
17.4	AMMONIA	25 t	10	n/p
17.5	VINYL	10 t	10	n/p

B18 VAPORISER

18.1	Type of vaporiser
18.2	Number fitted
18.3	Capacity (per unit)
18.4	Liquid supply rate
18.5	Delivery temperature

B19 BLOWER (N.A.)

19.1	Type of blower	
19.2	Rated capacity	cbm/hr
19.3	Delivery pressure	kg/cm ²

B20 CARGO RE-HEATER

20.1	Type of re-heater	VILL SCAMBIATORI ITEM HE 3002
20.2	Number fitted	1
20.3	Heating medium	Sea Water
	Discharge rates with sea water at 15°C to raise product temperature:	
20.4	for propane from -42°C to -5°C	180 Mt/hr
20.5	for ammonia from -33°C to 0°C	130 Mt/hr

B21 HYDRATE CONTROL

21.1	Freezing point temperature of Depressant	°C
21.2	Quantity of Depressant carried	litres
21.3	Means of injection	

B22 CARGO MEASUREMENT

	LEVEL GAUGES	
21.1	Are level gauges local or remote	LOCAL+REMO
21.2	Manufacturer	ENRAF
21.3	Type	806 MARINE
21.4	Rated accuracy	
21.5	Certifying authority	RINA
	TEMPERATURE GAUGES	
22.6	Manufacturer	ROSEMOUNT
22.7	Type	3144P
22.8	Rated accuracy	
22.9	Certifying authority	RINA
	PRESSURE GAUGES	
22.10	Manufacturer	ROSEMOUNT
22.11	Type	3051
22.12	Rated accuracy	
22.13	Certifying authority	RINA
	OXYGEN ANALYSER	
22.14	Manufacturer	MSA
22.15	Type	Pulsar O2
	FIXED GAS DETECTOR	N.A.
22.16	Manufacturer	
22.17	Type	
22.18	No of points detected	
	PORTABLE GAS DETECTOR	
22.19	Number	2
22.20	Manufacturer	MSA / OLDHAM
22.21	Type	EX-OX METER II / EX 2000
	TOXIC GAS INDICATOR	
22.22	Number	4
22.23	Type	1 MSA + 3 MSA GAS TESTER II H
	TOXIC GAS INDICATOR TUBES	
22.24	Number	Various
22.25	Products	Various
22.26	Exp.dates	Various
	TANKSCOPE	MSA
22.27	Type	Tankscope II H

B23 CARGO SAMPLING

23.1 Fill the following table

CARGO TANKS	SAMPLE		POINTS BOTTOM
	TOP	MIDDLE	
1	YES (GAS)	YES (LIQUID)	YES (LIQUID)
2	YES (GAS)	YES (LIQUID)	YES (LIQUID)
3			
4			
5			
6			

23.2 Can sample be drawn from:

- Tank vapour outlet YES
- Manifold liquid line YES
- Manifold vapour line YES
- Pump discharge line YES

23.3 State connection type and size $\frac{1}{2}$ INCH

B24 CARGO MANIFOLD ARRANGEMENTS

Liquid system 1	diam 8 inches ASA 300
Vapour system 1	diam 4 inches ASA 150
Vapour system 2	diam 4 inches ASA 150
Liquid system 2	diam 6 inches ASA 300

Distance liquid system 1 from canopy deck	910 mm
Distance liquid system 2 from canopy deck	910 mm
Distance vapour system 1+2 from canopy deck	940 mm
Distance manifold liquid 1 from vapour manifold	1050 mm
Distance manifold liquid 2 from vapour manifold	1140 mm
Distance manifold vapours 1 from man. vapours 2	1140 mm
Distance liquid manifold system 1 from ship's rail	1170 mm
Distance liquid manifold system 2 from ship's rail	1120 mm
Distance vapour manifold system 1+2 from ship's rail	1210 mm
Distance manifolds from main deck	4230 mm

B25 CARGO MANIFOLD REDUCERS

State number of reducers carried on board and their flange rating and size

25.1	AISI class 300	10 INCH X 8 INCH AISI 300 - 8 INCH X 8 INCH AISI 300
25.2		8 INCH X 6 INCH AISI 300 - 6 INCH X 6 INCH AISI 300 - 4 INCH X 6 INCH AISI 300
25.3		
25.4	AISI class 300 to class 150	
25.5		
25.6		
25.7	AISI class 150	4 INCH X 6 INCH AISI 150 - 4 INCH X 4 INCH AISI 150 - 3 INCH X 4 INCH AISI 150
25.8		

B26 MANIFOLD DERRICK/CRANE

26.1	Is Manifold Derrick provided	NO
26.2	Is Manifold Crane provided	YES
26.3	Is lifting equipment same port and starboard	YES
	If not give details	
26.4	State SWL at maximum outreach	4 TONS