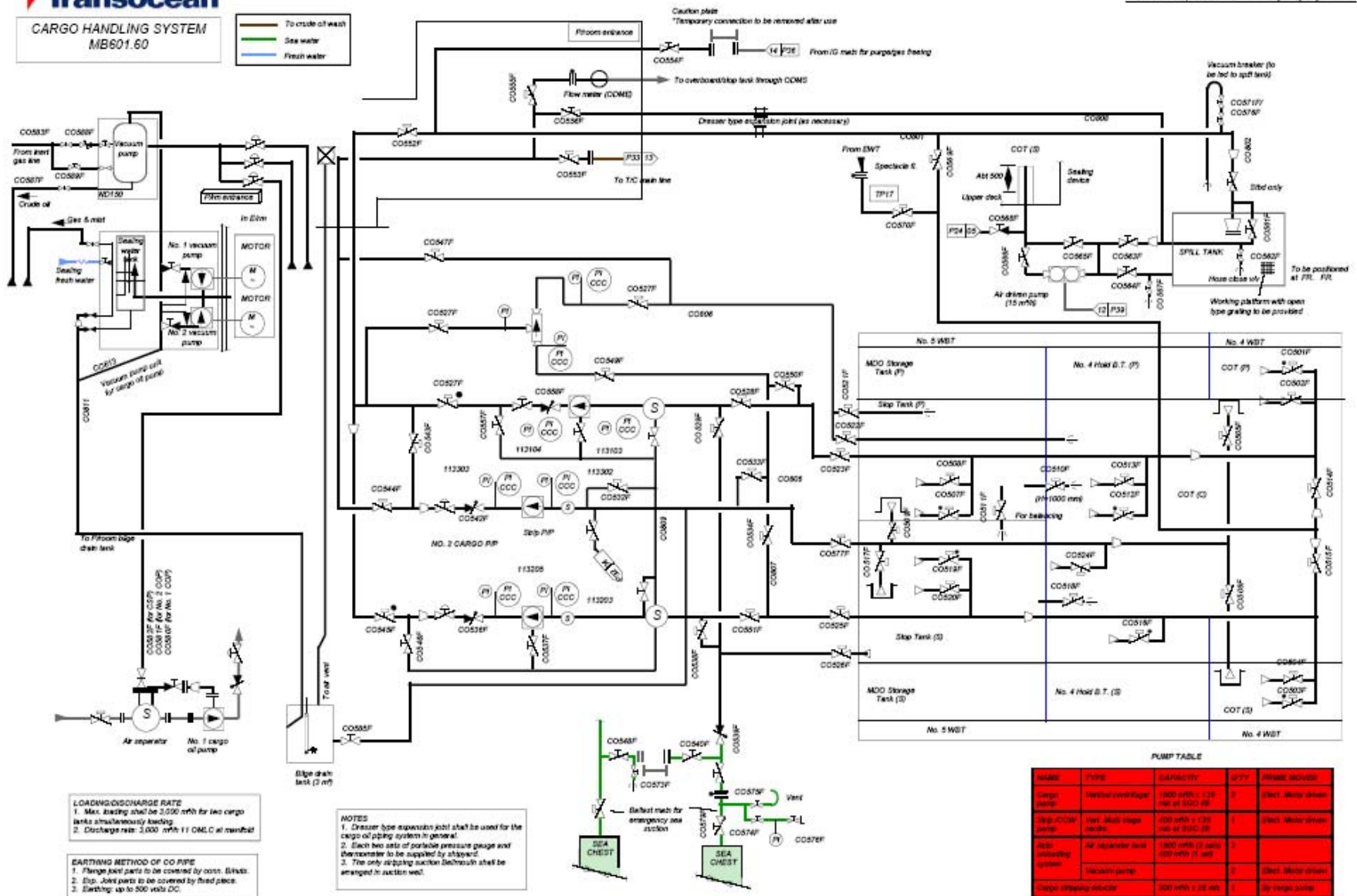
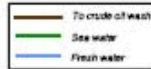


CARGO HANDLING SYSTEM
MB601.60



LOADING/DISCHARGE RATE
1. Max. loading shall be 3,000 m³/hr for two cargo tanks simultaneously loading.
2. Discharge rate: 3,000 m³/hr OMLC at manifold.

BARTING METHOD OF CO PIPE
1. Flange joint parts to be coated by coat. Blinds.
2. Slip. Joint parts to be covered by three pieces.
3. Earthing: up to 500 volts DC.

NOTES
1. Dresser type expander joint shall be used for the cargo oil piping system in general.
2. Each two sets of portable pressure gauge and thermometer to be supplied by shipyard.
3. The only jacking suction deckwash shall be arranged in suction well.

PUMP TABLE

NAME	TYPE	CAPACITY	QTY	DRIVE METHOD
Cargo pump	Vertical centrifugal	1000 m ³ / 135 hrs at 5000 RPM	2	Elect. Motor driven
Slip. CO ₂ pump	Vert. Multi stage	400 m ³ / 135 hrs at 5000 RPM	1	Elect. Motor driven
Air deaerating system	Air separator tank	1000 m ³ (2 sets) / 400 m ³ (1 set)	2	
Cargo oil/water interface	Vacuum pump	100 m ³ / 20 hrs	2	Elect. Motor driven

11.6 CARGO SYSTEM AND SLOP TANKS

11.6.1 CAPACITY AND STORAGE

Crude Oil Storage Details		
Tank	Capacity (98%)	Frame No's
Cargo oil tank port	3793m ³	71-77
Cargo oil tank centre	6545m ³	67-77
Cargo oil tank starboard	3793m ³	71-77
Port slop tank	653	65-67
Starboard slop tank	653	65-67
Total Capacity	15437 m³ (97480 bbl)	

- (a) Crude oil is loaded onto the drill ship from extended well test operations via valve CO570F (refer to drawing MB601.60) which joins the 500 mm main cargo manifold. Oil is then distributed by the main cargo pipework system into the cargo tanks as required, via 350 mm branch pipework.
- (b) All valves are hydraulic remote operated and are controlled from the dedicated mimic panel on the IACS screen.
- (c) During loading operations, the cargo computer is interfaced with the IACS and displays stresses and strains in the hull in both graphical and tabular formats.

11.6.2 COMPONENTS OF THE CARGO OIL SYSTEM

Cargo Oil Pumps

- (a) Cargo oil is loaded onto the drill ship from extended well test operations and is then transferred into shuttle tankers via the manifold located at starboard midships. Maximum discharge rate is 3000m³/hr, when sufficient oil is available.
- (b) The pumps are driven by 11 kV electric motors, mounted vertically in the engine room. A drive shaft which passes through a gas tight seal in the engine room to pump room deckhead, connects the pump and motor.
- (c) Control of the pumps is via the cargo control centre in the wheelhouse, using the IACS and the appropriate mimic diagrams.

Manual Emergency Stop Facilities

- On the main panel of the cargo control centre in the wheelhouse
- Local to the drive motor in the engine room
- In the pump room
- Local to the starboard cargo manifold.

Safety Monitoring System Details

Cargo Pumps Specification		
Pump	Particulars	
No.	Two (2)	
Type:	Vertical, single stage, centrifugal, double suction	
Prime mover:	A,C electric motor, two speed type	
Discharge capacity:	1,500 m ³ /h each	
Total head:	135 m at SG 0.88	
Viscosity of liquid:	8.7 Cp at 35°C	
Material	Volute casing	Bronze or Ni-al-bronze
	Impeller	Phosphor bronze or Ni-al-bronze
	Impeller shaft	Stainless steel (SUS 304) or acid resistant steel
	Inter shaft	Carbon steel
	Seal	Mechanical type

- Alarm repeating via the IACS at sudden loss of pressure in cargo discharge line.
- Overload trip
- Pump casing overheating trip
- Pump discharge pressure high trip
- Pump bearing high temperature trip
- Deck stuffing box (gas tight pump room/engine room seal) overheating trip.

Cargo Oil Stripping Pump

- (a) The drill ship is equipped with a cargo oil stripping pump of the vertical centrifugal type, (capacity 400m³/hr @ 135m head, when SG of fluid is 0.88, viscosity 8.7cp). The pump is driven by a single speed electric motor in the engine room with a drive shaft penetrating the pump room/engine room deck head through a gas tight seal.
- (b) Control of the pump is from the cargo control centre in the wheelhouse using the IACS and the appropriate vender diagrams.

Cargo Oil Stripping Eductor

The drill ship is also equipped with a cargo stripping eductor driven by the cargo pumps. The eductor, (capacity 500m³/h x 25m total head 5m suction head and 20m discharge head) is constructed as a nickel-alloy-bronze body with a Monel nozzle.

Cargo Oil Pipework System (refer to MB60/60)