



## **Safe Bunkering Procedures**

### **BUNKER QUANTITIES**

Final determination of the quantity on bunkers to be shipped in accordance with Owner or Charterer's voyage instructions should be based on the amount remaining on board (ROB) immediately before loading. This quantity is normally stemmed and agreed by the Company where separate Charterers practices exists.

It is stressed that any reference to bunkers capacity always refers to 98% of the total bunker storage capacity, i.e. with each bunker tank being 98% full.

The Chief Engineer, who is authorized to sign bunker receipts on behalf of the Company, must make every effort to ensure the accuracy of the quantity and quality shipped.

All such documentation must be countersigned by the Master with records of ullages (before and after), specific gravities, temperatures, samples, etc, being preserved for claims and reconciliation of any dispute that may arise.

### **BUNKER MARGINS**

On all normal voyages and unless otherwise instructed, the bunker safe margin must be between 5 to 3 days consumption.

It must be clearly understood that the bunker safe margin is intended as a final safety factor and as such is to cover any contingencies which the Master cannot reasonably foresee. Seasonal adverse weather or other factors which are normally expected on the intended voyage must be allowed for by the Master in making basic voyage calculations for bunker requirements.

Safety margins laid down may be exceeded and are calculated taking into account various commercial factors, which may be unknown to the vessel, if the Company or Charterers so require.

### **BUNKERING**

During bunkering, the oil levels in each tank being filled should be regularly checked through the sighting ports of ullage stand pipes (where fitted), rather than through sounding pipes, because these can sometimes give erroneous readings during filling process. Constant supervision of all compartments being filled is essential during the entire period that the bunker manifold valve is open.

The rate of shipping bunkers must not be in excess of that which can be handled with safety, and must be reduced when "topping up" compartments. Consideration must be given to the condition of all valves, pipelines and fittings, when deciding this flow rate.

Shore staff must be given ample warning prior to a required reduction or a stoppage in the rate of shipping bunkers. Where possible, and subject to agreement with the bunkering terminal, bunkering operations should be on a "ship stop" basis.

If for ship requirements, it is necessary to have the bunkering lines cleared by compressed air, all precautions must be taken to prevent overflow, including checking that full tanks are isolated and that the tank receiving the draining has sufficient ullage.

Full precautions to avoid any risk of pollution must be of paramount importance.

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## **BUNKER HANDLING**

Where bunker tanks are fitted with high and low suction, it is essential that low suction be always used, except in emergency when the use of high suction should be used until the water has been drained off, after which the low suction must be opened and the high suction closed.

When bunkers are transferred from a storage tank to a settling tank or a daily service tank, soundings must be taken regularly to avoid the effects of any inaccuracy of the remote reading gauges.

## **BUNKERS ONBOARD AT DRY-DOCKING**

When dry-docking, it is desirable, where practicable, that only the minimum quantity of bunkers should be on board. Headquarters will normally advise on bunker requirements prior to dry-docking.

On such an occasion that may be necessary to bunker a vessel with a substantial quantity for the following voyage prior to dry-docking. If it is envisaged that this will create dry-docking repair problems, Head-office are to be advised as soon as possible to decide on the matter.

## **FUEL PURIFICATION**

### **(heavy oil) diesel main engine**

The heavy fuel purifier is to be operated with the correct gravity disc diameters as required by the specific gravity of the fuel and in accordance with the manufacturer's instructions. Particular attention is to be given to ensure that the separator speed is correct and that fuel temperatures and flow rates are properly adjusted and controlled. If excessive water contamination is detected in the service tank, the service tank is to be by-passed temporarily and direct suction is taken from a bunker tank as necessary. The source of fuel contamination is to be determined immediately and eliminated. The service tank contents are to be centrifuged until all traces of water have been removed.

## **BEFORE BUNKERING CHECKLIST**

- 1.** The operation has been planned in advance and written down. All persons to take part in this operation have been briefed, and copies of the plan are given to them for strict adherence to the procedure.
- 2.** Effective communications system with shore staff or barge crew is established. An alternative system is agreed upon. in case of failure of the main one.
- 3.** The displaced air can escape freely from the air vent pipes.
- 4.** The amount of oil to be received can be safely accommodated in the available tank spaces.
- 5.** The unit of measurement being used is well defined.
- 6.** All sea and overboard valves connected to the bunker system are closed.
- 7.** Bunker system valves and connections not in use are closed and blank flanged.
- 8.** All deck scuppers are effectively sealed (e.g. plugged and cemented).
- 9.** Oil booms, if carried, are ready for quick launching.
- 10.** Drip trays are in position below connections and air vents.
- 11.** Hoses are in good condition, properly connected and supported.
- 12.** Dry absorbent materials (i.e. sawdust) are readily available.
- 13.** The piping system is lined up correctly.
- 14.** The valves to the tanks designated to receive first the incoming bunkers are open.

**AFTER CHECKING ALL THE ABOVE, YOU CAN NOTIFY THE TERMINAL TO COMMENCE BUNKERING**

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## **DURING BUNKERING**

1. Bunker hoses and connections are not leaking.
2. Pressure is relieved in tanks being topped up, either by slowing down the rate of the incoming bunkers or by controlled flow to the next tank(s) to be loaded.
3. Loaded tanks are closed and finished ullage is maintained. whilst other tanks are being loaded.
4. Permission is asked from the supply terminal before closing any valve on the fuel line.
5. Ample warnings are given to the terminal before the final notification for the interruption of the flow.
6. Ample ullage space is left in the last tank to allow for draining of the hoses and for relief of any air locks in the system.

## **ON COMPLETION OF BUNKERING CHECKLIST**

1. Hoses are drained before disconnecting.
2. Bunker system valves are closed.
3. Hoses are blank flanged as soon as they are disconnected.
4. Bunker system connections are blank flanged as soon as hoses are disconnected.
5. Fuel line and tank filling valves are securely closed.
6. Final soundings of all fuel oil tanks have been taken. Ample space is left for expansion.

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