West of England

Loss Prevention Bulletin

Bunkering Procedures

Members will be aware that the financial consequences of a pollution incident during bunkering are becoming increasingly unpredictable. Any spill, no matter how small, may result in penalties and costs far outweighing the apparent gravity of the event, reinforcing the need for every shipowner to eliminate the risks.

Procedures to be followed during bunkering operations will be detailed in a vessel's Safety Management System. However, this Bulletin has been written in order to reiterate best practice and includes a number of recommendations regarding the items that should be checked and verified throughout the various stages of the operation. These are summarised in the form of a loading plan and checklist, either for direct use by the ship or to assist Members in reviewing or formulating their own versions. Utilising a loading plan and checklist and following a predetermined routine may minimise the likelihood of important safeguards being overlooked.

Members requiring a more comprehensive account of prudent procedures relating to bunkering and oil cargo operations are referred to the IMO publication "Manual on Oil Pollution Section 1 - Prevention" (which is due to be revised and reissued by IMO) and the latest edition of the “International Safety Guide for Oil Tankers & Terminals” (ISGOTT).

A senior engineer should always be appointed to co-ordinate and take charge of the bunkering operation, and it is intended that the loading plan and checklist be used by this officer. He should first ensure that all crew members involved in the exercise are fully conversant with the specification and quantity of fuel to be lifted, the ship's fuelling and tank sounding arrangements, the alarm systems and the loading sequence. It is of primary importance that all personnel on board are made aware of the intention to bunker so that the vessel’s emergency response plan can be activated without delay in the event of a spill. In addition, it should not be forgotten that the bunkering facility itself may be the source of a spill, and the contingency arrangements of the barge or terminal should be checked and discussed beforehand.

Clear and detailed drawings of the vessel's bunkering system should be available for use by members of the ship's bunkering team during the operations and it is recommended that a piping diagram is posted in a suitable location for easy reference by the bunkering team. As well as aiding the routine checking of pipeline configurations, access to such diagrams may prove indispensible in an emergency.

When agreeing signalling procedures with the terminal or barge, Members are advised to consider using an audible alarm to supplement an emergency stop, recognisable by all parties. This additional defence may secure a swifter response than relying entirely on VHF contact or other methods of signalling. To reduce the chance of misunderstandings still further, the key elements of the bunker plan may be summarised in writing and signed by both the responsible bunkering officer and the supplier as confirmation of mutual agreement.

During the course of bunkering, representative samples should be taken and retained in line with company and regulatory requirements. The duty officer should keep in close contact with the bunker team throughout. Moorings should be tended to ensure that the movement of the vessel is restricted to a minimum and that the ship, as far as practicable, is kept upright and on an even keel.

It is clear from the Club's claims experience that the over filling of bunker tanks may result in claims, penalties and clean-up costs of extraordinary proportions. Moreover, the financial consequences of bunker spills are continuing to escalate.

If these basic principles of bunkering are followed, exposure to associated losses will almost certainly be reduced.

Bunkering Loading Plan and Checklist

Vessel	**Port**
Date	**Supplier**

Tank Loading Plan

Tank	Sounding/ ullage prior to bunkering	Quantity in tank prior to bunkering	Quantity to be loaded	Planned sounding/ ullage on completion	Planned quantity in tank on completion	Actual sounding/ ullage on completion	Actual quantity in tank on completion

Checklist

To be checked and signed off by the vessel, supplier, or both as appropriate.

No.	Checkpoint	Vessel	Supplier
Prior to Bunkering:			
1	Ensure all personnel are aware of the intention to bunker and of the emergency response procedures		
2	Ensure all personnel involved in the bunkering operation are wearing appropriate PPE		
3	Discuss bunkering plan and tank sequence with officers involved and ensure the tank loading plan is completed		
4	Establish and check the common communication link between bunkering station, duty officer and engine room, using intrinsically safe radios		
5	Close and secure all associated overboard discharge valves		
6	Close all unused manifold valves and blank off manifold connections using all securing bolts, properly tightened, with a gasket in place		
7	Plug all deck scuppers and make oil/watertight		
8	Provide means of draining off any accumulations of water on deck		
9	Empty out and plug save-alls for manifolds and bunker tank vents		
10	Check all bunker tank air pipes are open and unblocked		
11	Reconfirm space remaining in all bunker tanks to be filled		
12	Ensure all sounding pipe caps are tight, except when sounding tank		

No.	Checkpoint	Vessel	Supplier
13	Check that all bunker tank manhole covers and tank lids are closed and secured		
14	Check all bunker tank high level alarms are functioning		
15	Ensure designated overflow tank is prepared		
16	Place SOPEP equipment (sawdust, sand, absorbent pads, empty drums, squeegees, brushes etc.) in key locations ready for use		
17	Ensure suitable no smoking / no naked flame warning notices are posted		
18	Place fire fighting appliances ready for use		
19	Ensure all external accommodation superstructure doors and ports/windows are kept closed		
20	Ensure the radars are on standby and the main radio aerials have been earthed		
21	Check that VHF/AIS units are either switched off or operating on low power		
22	Check that all flag or light signals required by local regulations are displayed		
23	Rig fire wires fore and aft (if applicable)		
24	When bunkering from a barge ensure there is sufficient fendering between vessels so there is no metal to metal contact		
25	Ensure there is a safe means of access, adequately illuminated, in place between the vessels		
26	Ensure that the barge is securely moored alongside		
27	Check the weight of the hose does not exceed the SWL of vessel's lifting gear		
28	Check hose is of such a length that there is sufficient play to allow for movement, and that it is adequately supported		
29	Inspect hose and couplings for damage		
30	Place drip trays under hose couplings and flanges		
31	Check that delivery note quantities and bunker specifications are correct		
32	Ensure that Material Safety Data Sheets have been provided for each grade of fuel being stemmed		
33	Discuss bunkering plan with supplier		
34	Agree with supplier the quantity of oil to be pumped aboard		
35	Agree unit of measurement (metric tons, cubic metres, barrels etc.)		
36	Agree maximum pumping rate and pressure		
37	Discuss vessel's emergency response procedures with supplier		
38	Discuss supplier's own emergency response procedures		
39	Establish and check the communication link between vessel and supplier		
40	Agree signaling system with supplier - Commence Pumping		
	- Reduce Pumping Rate		
	- Cease Pumping		
	- Emergency Stop		
41	Carry out spot analysis with vessel's fuel test kit (if carried)		
42	Conduct compatibility test, if necessary		
43	Sight, agree and record shore/barge meter readings or tank figures		
44	Appoint crewmember to tend mooring lines during bunkering		
45	Prepare filling line and open all relevant valves, ensuing all valves not in use are closed		

No.	Checkpoint	Vessel	Supplier
During Bunkering:			
46	Ensure a crewmember is stationed at the bunker manifold throughout the bunkering operation		
47	Commence bunkering at minimum pumping rate		
48	Monitor supply line pressure		
49	Examine hose and connections for leakage prior to increasing delivery rate		
50	Ensure soundings/ullages of tanks being filled are closely monitored		
51	Periodically check the quantity of fuel in bunker tanks that are not being loaded, or have completed loading		
52	Reduce pumping rate and/or open next tank before topping off		
53	Close valves as each tank is completed, ensuring that the loading hose is not subjected to excessive back pressure		
54	Ensure sufficient ullage in the final tank for hose draining/line blowing		
55	Notify supplier on reaching final tank		
56	Give supplier timely warning to reduce pumping rate		
57	Give supplier timely warning to stop pumping		
58	Drain hoses on completion of bunkering and close all filling valves		
On Completion of Bunkering:			
59	Ensure all hoses are fully drained		
60	Close manifold valve and blank off manifold connection using all securing bolts, properly tightened, with a gasket in place		
61	Blank off disconnected hose couplings using all securing bolts, properly tightened, with a gasket in place		
62	Reconfirm all bunker line and tank filling valves are closed		
63	Reconfirm all bunker tank soundings		
64	Ensure all sounding pipe caps are securely fitted and all sounding pipe automatic closure devices, where fitted, are not open		
65	Sight, agree and record shore/barge meter readings or tank figures		
66	Verify all bunker receipt details are correct		
67	Witness, date, jointly countersign and retain sealed bunker samples in line with company and regulatory requirements		
68	Complete entry in Oil Record Book		

Signed for ship	**Signed for supplier**
Rank:	**Designation:**

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