



MANAGEMENT SYSTEM MANUAL

ARM-7.5.6 FUEL OIL TRANSFER AND TREATMENT

Originator:

Gary McGrath

Approved By:

Al Suchy

1. References

- a) Drawing *Auxiliary Systems Diagram – Fuel Oil*, 65411-541-01,
- b) Oil Record Book, 3rd Edition, 2011 (Part 1 as required by 33CFR 151.25)
- c) Resolution MEPC.182(59) – 2009 *Guidelines for the Sampling of Fuel Oil for Determination of Compliance with the Revised MARPOL Annex VI*
- d) *Shipboard Oil Pollution Emergency Plan (SOPEP)*

2. Purpose

The purpose of this procedure is to set forth general instructions for the transfer and treatment of the fuel oil onboard R/V Armstrong.

3. Responsibility

The Chief Engineer is responsible for the safe transfer and proper treatment of the fuel oil used on board the Armstrong. Under his/her direction, the Second Engineer is responsible for the fuel oil system as set forth in the *ISM Procedure ARM 7.5.2 Responsibilities of Engineer's*. If the 'designated person in charge' is unable to continue for any reason, the Chief Engineer must authorize the formal transfer of responsibilities to another qualified engineer. The Chief Engineer must also ensure that the designated person and relieving engineer are aware of the bunker plan.

The Chief Engineer will ensure that all personnel assigned to the bunker operations are well rested and within their work hour limitations. Even a crewmember within their work hour limitations can be fatigued due to a number of circumstances. A fatigued crewmember should be relieved by a rested crewmember.

4. General

The transfer of fuel oil to and from the vessel is conducted in accordance with this procedure and in conjunction with, but not limited to, its included references. Bunkering activities may also be subject to local regulations and terminal requirements and or guidelines. As laws may change from time to time, it is advisable to check with the agent and or local authorities for the most current regulations and requirements.

A representative sample shall be taken of the fuel that is delivered to the vessel. This sample is to be sealed, dated and signed by the supplier's representative and the master or officer in charge of the bunker operation on completion of bunkering.



MANAGEMENT SYSTEM MANUAL

ARM-7.5.6 FUEL OIL TRANSFER AND TREATMENT

Originator:

Gary McGrath

Approved By:

Al Suchy

operations. This sample is to be retained under the ship's control until the fuel is substantially consumed and for a period of not less than 12 months from time of delivery. The sample shall be kept in the Hazardous Storage Room No. 1 on the focsle deck.

Fuel oil taken on the vessel shall be treated with a fuel oil biocide treatment such as Amerstat 25 or an equivalent. The biocide should be dosed at the fuel manifold and preferably not into the sounding tubes. Fuel is to be periodically tested for hydro-carbon utilizing microbes.

Crane operations should cease during bunker operations to prevent any unusual motion of the vessel.

Appendix I is provided as a generic '*Declaration of Inspection*' to be used if the transfer facility does not provide one. The *Declaration of Inspection* shall be retained on board for 30 days.

5. Transfer operations (within R/V Armstrong)

Fuel oil is moved from storage tanks at the direction of the Chief Engineer. Consideration should be made for both the length of time that the fuel has been on board and for stability implications involved in such a move. The Chief Engineer will confer with the Master to decide which tanks are to be drawn from during the course of a voyage.

6. Bunkering Operations

Bunkering operations must be conducted in strict accordance with the letter and intent of all regulations. If there is a conflict, real or perceived, between the regulations and the guidelines in this document, then the regulations shall take precedence.

All fuel tanks are to be sounded prior to taking on new fuel. Every attempt should be made to load new fuel in empty tanks and avoid mixing previously loaded fuels. All tanks are to be sounded at the conclusion of taking on fuel. If available, a water finding paste should be used.



MANAGEMENT SYSTEM MANUAL

ARM-7.5.6 FUEL OIL TRANSFER AND TREATMENT

Originator:

Gary McGrath

Approved By:

Al Suchy

The Chief Engineer is to prepare a bunkering plan prior to the pre-transfer conference. The plan is to be attached to the oil transfer procedures and must include the following:

- Tank Identification
- Starting/ Finishing Ullages
- Sequence of Filling
- Monitoring Procedures
- Stop the Transfer Responsibility:

Ensure everyone involved in the bunkering operation knows he or she has the responsibility to stop the transfer process at any time, should anything appear to be out of order.

If watches will change during the bunkering operation, include relief personnel in training session and the pre-loading plan.

A copy of the Bunkering Plan is to be displayed during all bunkering operations and understood and signed by all involved.

Prepare deck and receiving areas as required and as listed under the Declaration of Inspection. These preparations shall include, but are not limited to:

- Acknowledgement that Hot Work and other restricted activity will not be conducted until the delivering vessel (tank truck, tanker or barge) has departed
- Spill kit is made available at the bunker station
- Close and secure all required hatches, doors and portholes
- Seal all scuppers and drains from which overflowing oil might spill over the side of the vessel
- Post all proper warning signs and signals
- Ensure a well-lit receiving area to provide for efficiency, safety and crew alertness



MANAGEMENT SYSTEM MANUAL

ARM-7.5.6 FUEL OIL TRANSFER AND TREATMENT

Originator:

Gary McGrath

Approved By:

Al Suchy

When receiving fuel there shall be no less than 3 trained crew assigned to bunker operations.

- 7. Reporting, Records and Documentation** – The following documents specified by requirements listed here are required to be retained on board per the specified time.

Per 33 CFR Part 151.25 any time fuel oil is taken on board, the quantity shall be recorded in the *Oil Record Book* and in the Engineer's Log. The *Oil Record Book* shall be maintained on board for not less than (3) three years.

Per 33 CFR 156.150 – *Declaration of Inspection (DOI)* is to be retained on board for 30 days after completion of bunkering.

All exercises conducted aboard the vessel shall be documented in the vessel's log. The vessel shall maintain adequate records of drills and exercises for a period of at least 3 years, to include records of any off-vessel drills and exercises.

The *Bunkering Plan* is to be retained on board along with the *Bunker Delivery Note* (if required) for a period of at least 3 years.

Per 40 CFR 1043.80 and MARPOL Annex VI Regulation 18.5 and Appendix 5, vessels over 400 gross tons on international routes must have *Bunker Delivery Notes* (BDN) containing standard information (including sulfur content).

The *Bunker Delivery Note* is now a statutory document that must be retained onboard for a period of 3 years from the time of bunkering. The following information must be displayed on the BDN:

- The name and IMO number of the receiving vessel
- The port of bunkering
- Date of commencement of bunkering
- The name, address and telephone number of the supplier
- The delivered products name. Fuel type & designation under 40 CFR part 80
- The quantity delivered in metric tons
- The density at 15 Degrees C
- The Sulphur content by %



MANAGEMENT SYSTEM MANUAL

ARM-7.5.6 FUEL OIL TRANSFER AND TREATMENT

Originator:

Gary McGrath

Approved By:

Al Suchy

- A statement that the fuel supplied to your ship meets Regulation 14.1 or 4.a (Sulphur limit regulations) and Regulation 18.1 (the general fuel quality regulation) The vessel must mark the seal number used for Annex VI sample on the BDN and obtain the signature of the supplier for this note

Fuel Oil Tank Information

Tank Designation	Location	Frame	96% Full
Wing Tank No. 1 (P)	Hold Compartment	29-39	28,873
Wing Tank No. 1 (S)	Hold Compartment	29-39	28,873
Wing Tank No. 2 (P)	Hold Compartment	39-45	19,007
Wing Tank No. 2 (S)	Hold Compartment	39-45	19,007
Double Bottom Tank No. 3 (P).	Hold Compartment	49-58	5,474
Double Bottom Tank No. 3 (S).	Hold Compartment	49-58	5,474
Double Bottom Tank No. 4 (P).	Hold-DB Compartment	58-77	10,911
Double Bottom Tank No. 4 (S)	Hold-DB Compartment	58-77	10,911
Double Bottom Tank No. 5 (C)	Hold-DB Compartment	78-88	7,357
Day Tank (P)	Hold-DB Compartment	77-81	3,907
Day Tank (S)	Hold-DB Compartment	77-81	3,907
Emergency Generator Tank	Focsle Incinerator Room	62-63	130
Overflow Settling Tank (C)	Hold Compartment	74-77	2,252

Fuel Oil Tanks:

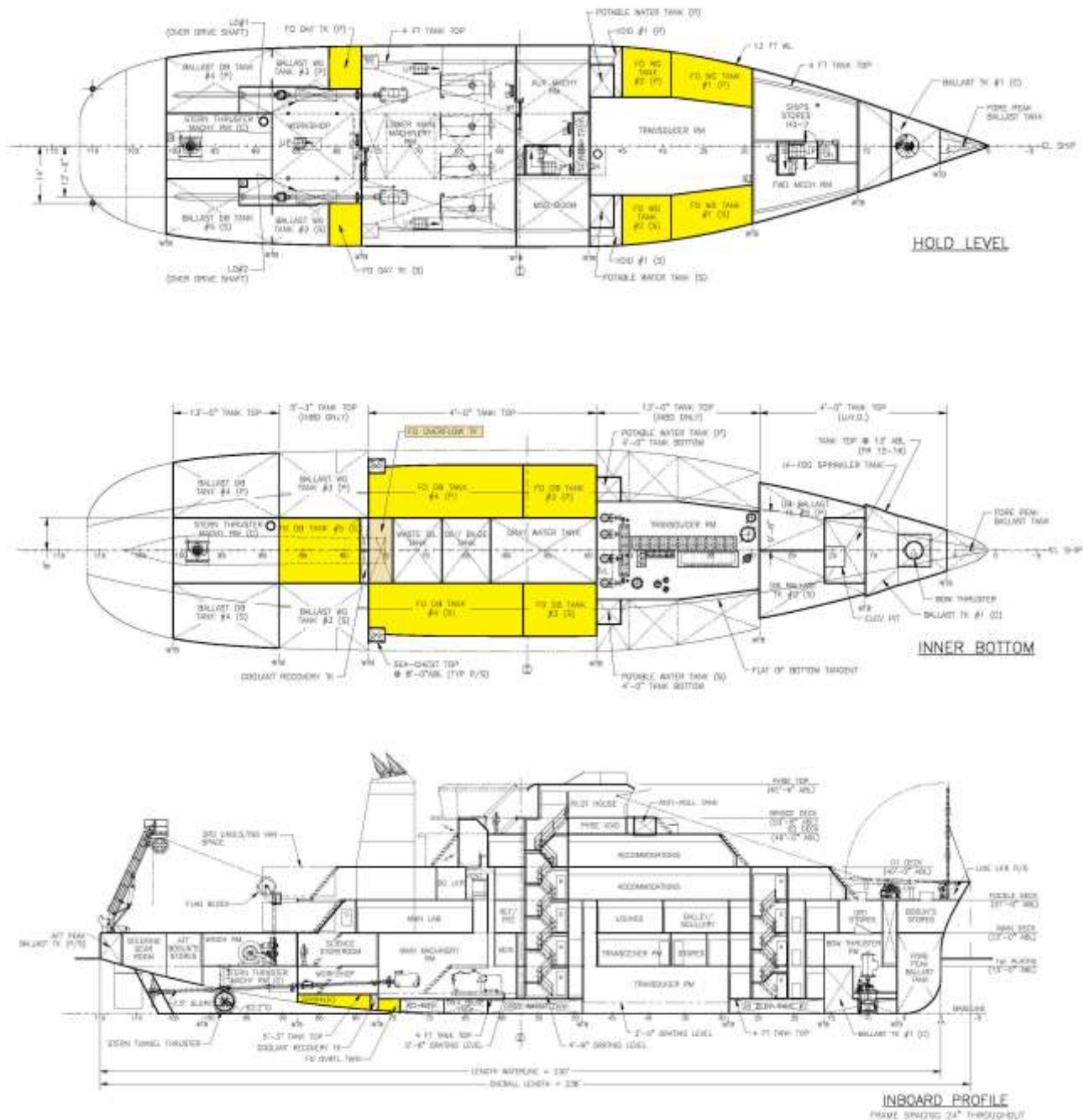


MANAGEMENT SYSTEM MANUAL

ARM-7.5.6 FUEL OIL TRANSFER AND TREATMENT

Originator:
Gary McGrath

Approved By:
Al Suchy



Fuel Oil Piping Arrangement:

