



# SAFETY MANAGEMENT SYSTEM MANUAL

## ARM 7.5.9 Bilge and Ballast Handling Operations

Originator:	Approved By:
Gary McGrath	Albert F. Suchy

### 1. Purpose

The purpose of this procedure is to provide the correct handling of bilge and ballast waters for pollution prevention aboard RV Neil Armstrong.

### 2. Responsibility

The Chief Engineer is responsible for the operation of the bilge and ballast handling equipment. The Master shall direct the Chief Engineer as to which ballast tanks shall be filled or emptied.

A Watch or Duty Engineer may, on the direction of the Chief Engineer, execute the actual pumping operations. All pumping operations must be in accordance with these procedures. The responsibility for pumping bilges ultimately rests with the Chief Engineer.

### 3. References

- Auxiliary Systems Diagram – Bilge, Ballast & Oily Waste, Dwg. No. 65411-529-01
- Technical Manual – GEA Westfalia, Model BM-E 500 CD WSE 5-01-037 Bilge Master® clean design
- 33 CFR Part 151, Subpart D - Ballast Water Management for Control of Nonindigenous Species in Waters of the United States
- Marpol 73/78 as Amended
- ARM 03 - Ballast Water Treatment Plan
- Ballast Water Record Book
- Oil Record Book for Ships

### 4. Procedure

#### Bilge System

The following spaces are serviced by the bilge system:

#### Forward Bilge Manifold

Auxiliary Machinery Room (AMR)  
Void No. 1 Port & Starboard  
Transducer Room Port & Starboard  
MSD Room  
Work Shop

#### Aft Bilge Manifold

Main Machinery Room (MMR) Port & Starboard  
Work Shop Port and Starboard  
Winch Room Port & Starboard  
Steering Gear Room  
Stern Thruster Room  
Oil Bilge Tank

As the bilge system has common manifolds, all bilge water is to be pumped to the oily bilge tank. The oily bilge tank will be handled using the Oily Water Separator (OWS) located in the Marine Sanitation Device (MSD) room. See Reference (a.) above for pumping details.



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OWS – The Westfalia ‘E’ 500 Clean Design System (2.2 gpm) OWS is installed on board Armstrong. Read, understand and follow the manufacturer’s instructions and safety precautions when operating this system.

The OWS can take suction from the following tanks.

- Oily Bilge Tank
- MMR (P&S)
- Stern Tube Seal leak-by containment (P&S)

The OWS can discharge to:

- Overboard (clean bilge water overboard). This valve is to be locked closed during all in-port stops.
- Waste oil tank
- Oily bilge tank
- Grey Water Tank – **Note: the valve to the grey water tank is to be locked closed and only used as directed by the Chief Engineer.**

### Ballast Water

The procedures outlined in the Ballast Water Maintenance Plan (BWMP) shall be adhered to. The Ballast Water Maintenance Plan (BWMP) is set forth in procedure ARM-03. The point of ballast water pollution prevention is to stop the introduction of non-native species of sea animals and plants to foreign coastal shores. Any ballast water taken on at a coastal area less than 200 miles from shore or less than 2000 meters depth, should only be discharged in the same area or in “Open Ocean”. It is preferred that the Ballast Water Treatment System (BWTS) be the normal method for taking on or discharging ballast water. If the BWTS is non-operational then the next preferred method is that only “Open Ocean” ballast water will be taken on and discharged to the “Open Ocean”.

Caution: Using the Bilge/Ballast/ Fire pump as an emergency bilge pump could contaminate ballast discharge piping and allow discharge of untreated bilge water. This valve is to be locked closed at all times.

### **5. Reporting**

The taking on and discharging of Ballast Water should be noted in the Ballast Water Management Plan (BWMP). See ARM-03 for specifics on the required reporting procedures.

The Oil Record Book (ORB) shall be used to record all activities concerned with the pumping and discharging of bilge water either to and or from tanks or overboard. A log entry shall be made when unlocking/ locking valves listed in this procedure. Oil record book must be maintained aboard the Armstrong for at least 3 years following the “to” date listed on the cover page of the ORB