



MANAGEMENT SYSTEM MANUAL

ARM 8.12 Engine Room Flooding

Originator:

Gary McGrath

Approved By:

Albert F. Suchy

1. Purpose

The purpose of this procedure is to establish guidelines for responding to Engine Room flooding and the alternatives available.

2. Responsibility

It is the responsibility of the Chief Engineer to ensure that procedures are established to handle an engine room flooding emergency.

3. References

- a. Auxiliary Systems Diagram, Bilge and Ballast Drawing No. 65411-529-01
- b. Auxiliary Systems Diagram, Seawater Service Drawing No. 65411-524-01

4. System Description

Main Machinery Room

The Main Machinery Room (MMR) has two normal 2" bilge suctions on the aft bilge manifold. The bilge suctions are located in the aft port and starboard corners of the engine room. There is an independent bilge suction located near the pump that has a remote reach rod that is found in the Main Control Station (MCS). There is a single 210 GPM Bilge pump in the MMR for normal bilge pumping operations. Suction can also be taken from these bilge pockets utilizing the oily water separator that is located in the Marine Sanitation Device room (MSD).

In case of an emergency, the Emergency Ballast/ Bilge Crossover can be opened and the Bilge/ Ballast & Fire Pump, which has a capacity of 360 GPM, can be utilized. Caution should be used when utilizing this cross-over valve as the ballast system could be contaminated and there exists a possibility of discharging oil overboard.

The No. 2 Central Cooling SW Circulating Pump (port) can be lined up to take suction on the MMR bilge. This suction valve can be opened from the Main Deck.

Watertight Doors 3-56-2 , 3-77-1 and 2-56-2 are to be closed in any flooding situation.



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Auxiliary Machinery & MSD Room

The Auxiliary Machine Room (AMR) has one normal bilge suction located on the aft outboard corner. The valve for this suction is located on the forward bilge manifold. The normal suction is with the Bilge Pump located in the MMR. No other hard piped bilge piping is located in this space.

The MSD room is arranged similarly to the AMR with a single bilge suction. The suction valve is also located on the forward bilge manifold.

Dewatering of these spaces using the electric powered portable pump should be considered if required.

5. Procedures

Indications:

1. "High Bilge Level" Alarm
2. Inability to control bilges by normal means
3. Water flooding into the machinery space from ruptured salt water line or hull

Immediate Action:

1. Investigate source of flooding and take immediate and aggressive action to isolate leak/rupture.
2. Pull fire alarm lever: The 'All Call' alarm will have sounded however, depending on the level of urgency; consideration should be given to utilizing the fire alarm.
3. Align the MMR bilge pump, as detailed above and pump overboard.
4. If flooding is severe and the machinery room bilge pumps cannot keep up with the ingress of water, then line up the No. 2 central cooling SW circulating pump and utilize the emergency bilge suction located on this pump.

Subsequent Action

(If flooding is uncontrollable and water has risen to a dangerous level)

1. Secure main propulsion machinery and systems.
2. Ensure the emergency diesel generator starts and energizes the emergency bus. Isolate main and emergency bus.
3. Secure all auxiliary equipment and systems.
4. Secure suction and return of all fuel and lube oil tanks.
5. De-energize main bus and secure SSDGs.
6. Gather and account for all personnel in the machinery space.



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7. Evacuate the machinery space.
 8. Close all watertight doors and isolate machinery space.