

FIREMAIN AND BALLAST SYSTEM

INTRODUCTION

The Firemain and Ballast System are closely linked, they use a common suction from sea and also use the same pumps. The Firemain System is a dry system and is normally maintained in a standby condition and is placed in operation in the event of a fire. The Ballast System is used to keep the ship in trim for proper stability at all loading conditions.

FUNCTIONAL DESCRIPTION

Firemain System

The Fire/Ballast pumps are electric-motor-driven centrifugal pumps and have a twenty (20) horsepower motor and a discharge capacity of (175) GPM. No. 1 Fire/Ballast pump is located in the Main Generator Room, lower level aft stbd. outboard and No. 2 Fire/Ballast pump is located in the Main Propulsion Motor Room, lower level outboard No. 2 Main Propulsion Motor. No. 1 Fire/Ballast pump can be operated from its local controller, the Fire Control Station located outside the Crew's Mess and the Main Control Station Console. No. 2 Fire/Ballast pump can be operated from its local controller, the Fire Control Station and the Ship's Control Console on the bridge. No. 1 Fire/Ballast pump is powered from Circuit Breaker P-429, on the Ship's Service Switchboard, one of the feeder breakers for Motor Control Center 1 A/B and No. 2 Fire/Ballast pump is powered from the Emergency Switchboard.

Each Fire/Ballast pump has a motor operated suction and discharge valve. The valves are located in close proximity to the Fire/Ballast pumps. The motor operated valves have three modes of operation: 1) By disengaging the motor, the valves can be operated manually; 2) They can be operated electrically from the local Fire/Ballast pump controller; and 3) They can be operated remotely. No. 1 Fire/Ballast pump valves can be operated from the Fire Control Station and the Main Control Console, and No. 2 Fire/Ballast pump valves from the Fire Control Station and the Ship's Control Console. No. 1 Fire/Ballast pump valves have open/shut indication on the local controller, the Fire Control Station and the Main Control Console. No. 2 Fire/Ballast pump valves have open/shut indication on the local controller, the Fire Control Station and the Ship's Control Console.

The Fire/Ballast pump local controller determines which mode the pump is in by the position of the FIRE/OFF/BALLAST mode selector switch. In FIRE mode the pump cannot be started at any station unless the motor operated suction valve is open and the motor operated discharge valve is closed. Once the pump is operating the discharge valve may be operated.

Each Fire/Ballast has a discharge pressure gage and the firemain header on the main deck has a pressure transducer and pressure switch. The pressure transducer provides indication at the Fire Control Station, the Main Control Console and the Ship's Control Console. The pressure switch which is set at eighty (80)

psig provides a low pressure alarm at the Fire Control Station, the Main Control Console and the Ship's Control Console.

The ship has fifteen (15) fire stations as follows:

Fire Station Number	Location
1	Upper Deck CL, Frame 14
2	Upper Deck CL, Frame 20
3	Upper Deck CL, Frame 43
4	Focsle Deck CL, Frame 17
5	Focsle Deck CL, Frame 43
6	Focsle Deck Port, Frame 47
7	Focsle Deck Stbd, Frame 52
8	Main Deck CL, Frame 33
9	Main Deck CL, Frame 68
10	Main Deck Port, Frame 72
11	Main Deck Stbd, Frame 72
12	Main Gen Rm CL, Frame 34
13	Main Gen Rm CL, Frame 52
14	Prop MLR Rm CL, Frame 60
15	Prop MLR Rm CL, Frame 72

To provide emergency isolation of the fore and aft portions of the Firemain, a 3-inch steel gate valve is installed in the Firemain located in the overhead, Main Deck Passage (1-9-0) approximately at Frame 50

The system may be cross connected to the Propulsion Motor Saltwater Cooling System via a hose located on the port outboard bulkhead of the auxiliary Potable Water Tank 2-58-0-W. The hose is connected to two hose connections, one on the Firemain System and one on the Propulsion Motor Saltwater Cooling System. The Propulsion Motor Saltwater Cooling System is then provided with cooling water from the Firemain System.

Ballast System

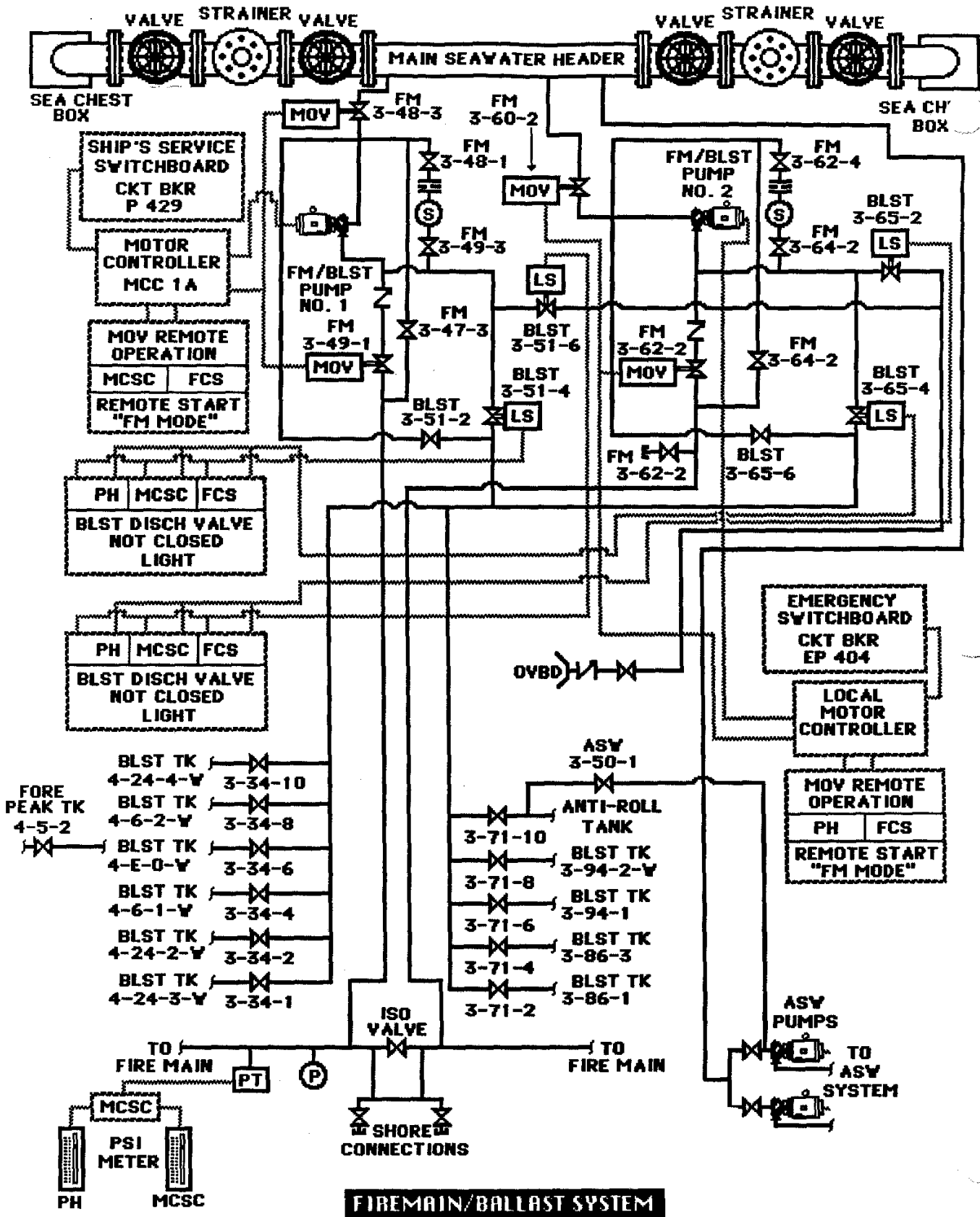
The Ballast System has ten (10) tanks: six (6) forward and four (4) aft and one (1) Anti-Roll tank. There are two (2) ballast manifolds, located in the Main Generator Room FWD and Aft in the Propulsion Motor Room.

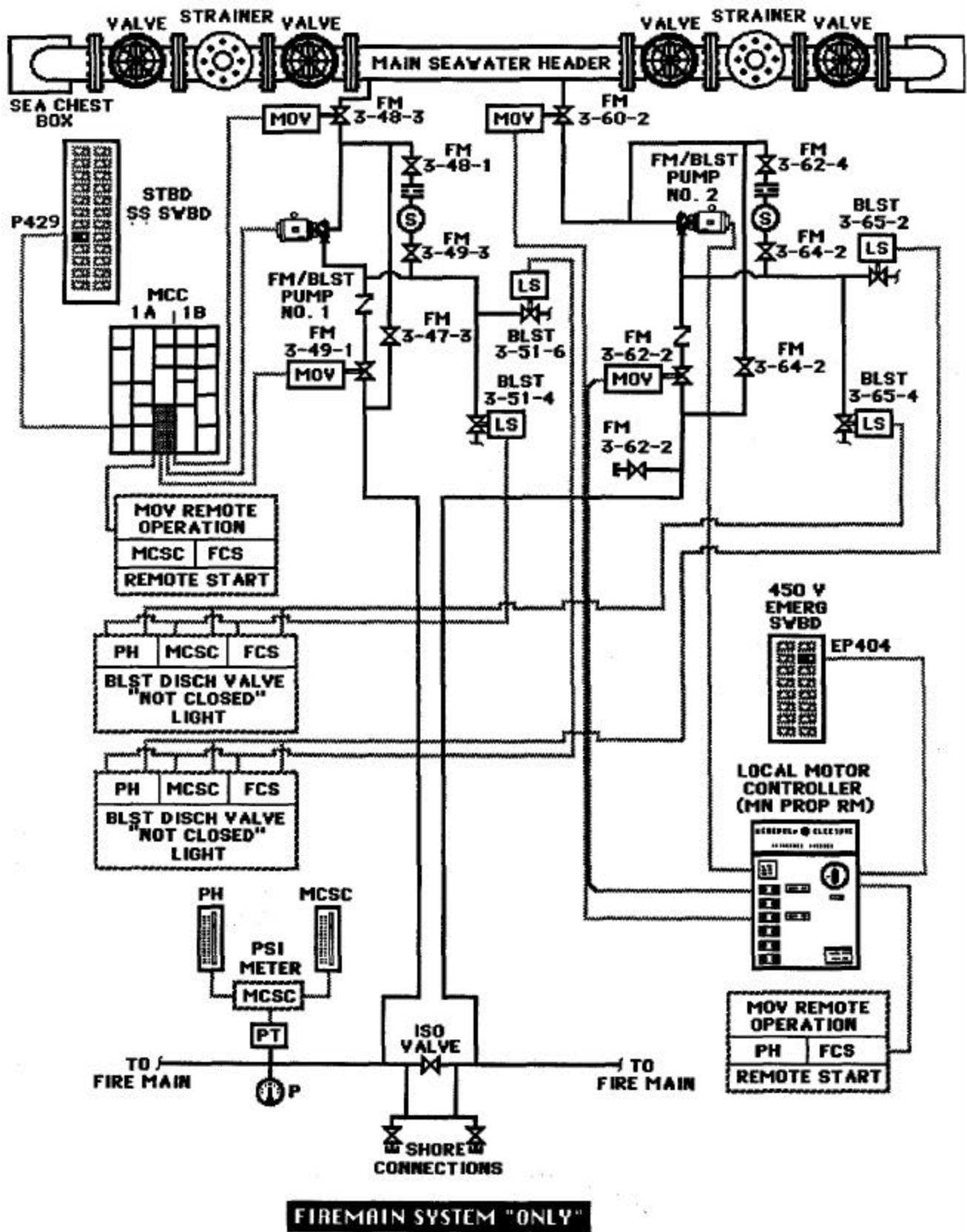
Tank Numbers are as follows:

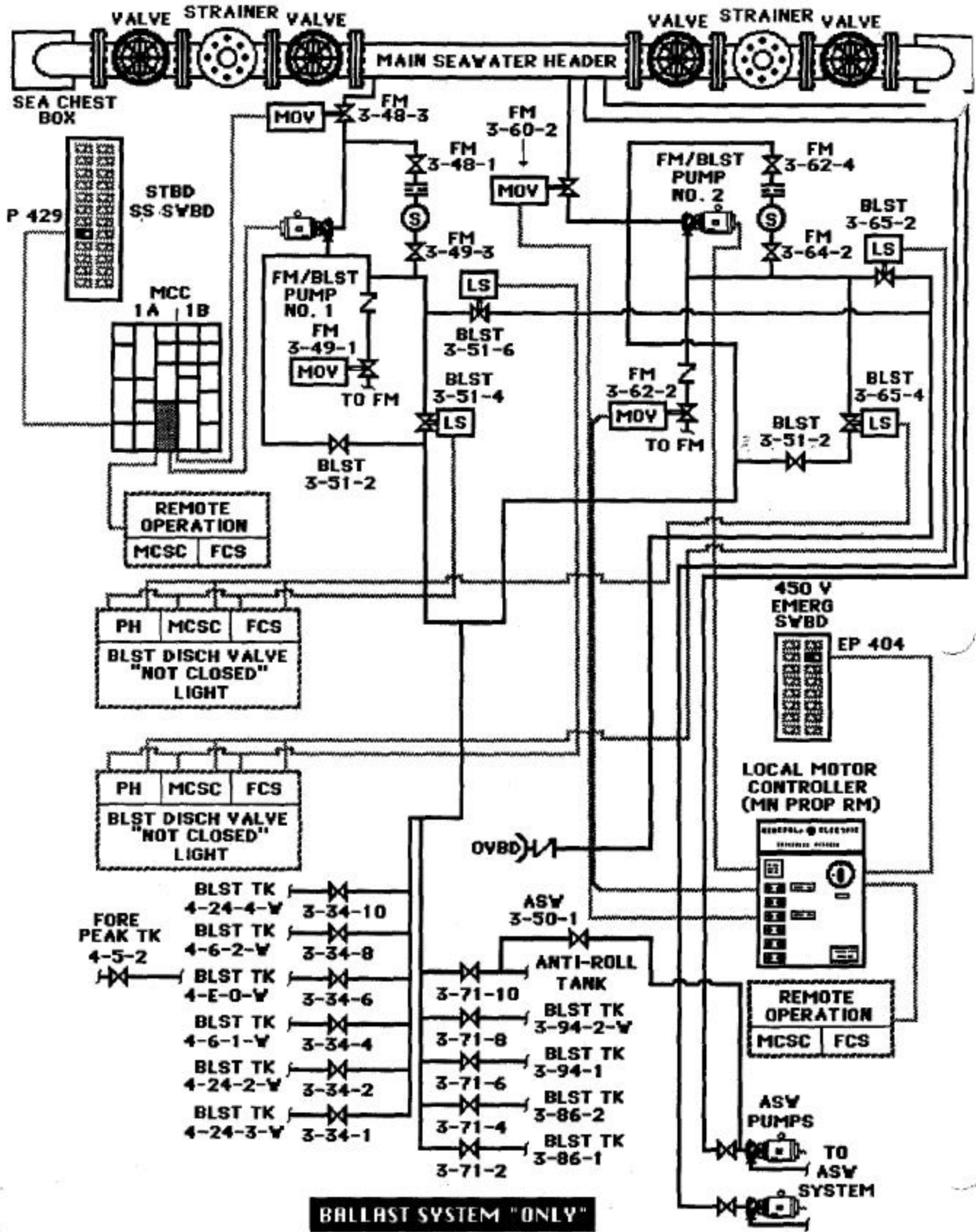
4-A-0-W	4-86-1-W
4-6-1-W	4-86-2-W
4-6-2-W	3-94-1-W
4-24-2-W	3-94-2-W
4-24-3=W	2-72-0-W (Anti-roll tank)
4-24-4-W	

The Fire/Ballast pumps and controllers and motor operated valves described in the Firemain Section are operated in the ballast mode determined by the FIRE/OFF/BALLAST mode selector switch. This allows the pumps to be started without the motor operated suction valve open for deballasting operations.

The Fire/Ballast Pump discharge to overboard and discharge to ballast valves each have a micro switch to indicate its position. The remote lights are located in MCS, Fire Control Station, and on the Ship's Control Console. The lights indicates that a ballast discharge valve is NOT CLOSED warning the operator of the possibility that firemain may not be available.







BALLAST SYSTEM "ONLY"