

(7) Main circulating pumps shall have direct suction connections, provided with non-return valves, to the lowest drainage level in the machinery space, and of a diameter at least two-thirds that of the main sea inlet. Where the fuel is, or may be, coal, and there is no watertight bulkhead between the engines and boilers, a direct discharge overboard shall be fitted from at least one circulating pump, or, alternatively, a bye-pass may be fitted to the circulating discharge.

(8) (a) All pipes from the pumps which are required for draining cargo or machinery spaces shall be entirely distinct from pipes which may be used for filling or emptying spaces where water or oil is carried.

(b) Lead pipes shall not be used under coal bunkers or oil fuel storage tanks, nor in boiler or machinery spaces, including motor rooms in which oil settling tanks or oil fuel pump units are situated.

(9) The Administration shall make rules relating to the diameters of the bilge main and branch pipes which shall be proportioned respectively in relation to the size of the ship and the sizes of the compartments to be drained.

(10) The arrangement of the bilge and ballast pumping system shall be such as to prevent the possibility of water passing from the sea and from water ballast spaces into the cargo and machinery spaces, or from one compartment to another. Special provision shall be made to prevent any deep tank having bilge and ballast connections being inadvertently run up from the sea when containing cargo, or pumped out through a bilge pipe when containing water ballast.

(11) Provision shall be made to prevent the compartment served by any bilge suction pipe being flooded, in the event of the pipe being severed or otherwise damaged, by collision or grounding, in any other compartment. For this purpose, where the pipe is at any part situated near the side of the ship or in a duct keel, there shall be fitted to the pipe in the compartment containing the open and either a non-return valve, or a screw-down valve which can be operated from a position above the bulkhead deck.

(12) All distribution boxes, cocks and valves in connection with the bilge pumping arrangement shall be in positions which are accessible at all times under ordinary circumstances. They shall be so arranged that in the event of flooding the emergency bilge pump may be operative on any compartment. If there is only one system of pipes common to all the pumps, the necessary cocks or valves for controlling the bilge suction must be workable from above the bulkhead deck. If in addition to the main bilge pumping system an emergency bilge pumping system is provided, it shall be independent of the main system and so arranged that the emergency pump is capable of operating on any compartment under flooding conditions.

#### *Motor Ships*

(13) The bilge pumping arrangements in motor ships shall, so far as practicable, be equivalent to those required for steamships of similar size, except as regards main circulating pumps.

### REGULATION XX

#### *Power for Going Astern*

Ships shall have sufficient power for going astern to secure proper control of the ship in all circumstances.