

circulating discharge. The spindles of the sea inlet and direct suction valves shall extend well above the engine room platform.

(h) (i) 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.

(ii) Lead pipes shall not be used in or under coal bunkers or oil fuel storage tanks, or in boiler or machinery spaces, including motor rooms in which oil settling tanks or oil fuel pumping units are situated.

(i) The Administration shall make rules relating to the diameters of the bilge main and branch pipes. The diameter of the bilge main may be determined approximately from the following formulæ:—

$$d = \sqrt{\frac{L(B+D)}{2,500}} + 1$$

where d = internal diameter of the bilge main in inches
 L = length of ship in feet
 B = breadth of ship in feet
 D = moulded depth of ship at bulkhead deck in feet;

or

$$d = 1.68 \sqrt{L(B+D)+25}$$

where d = internal diameter of the bilge main in millimetres
 L = length of ship in metres
 B = breadth of ship in metres
 D = moulded depth of ship at bulkhead deck in metres.

(j) 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.

(k) 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 nearer the side of the ship than one-fifth the breadth of the ship (measured at right angles to the centre line at the level of the deepest sub-division load line), or in a duct keel, a non-return valve shall be fitted to the pipe in the compartment containing the open end.

(l) All the distribution boxes, cocks, and valves in connection with the bilge pumping arrangements shall be in positions which are accessible at all times under ordinary circumstances. They shall be so arranged that, in the event of flooding, one of the bilge pumps 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 suctions must be workable from above the bulkhead deck. If, in addition to the main bilge pumping