

PREVENTION OF HEELING.

15. It is very important that a vessel should have sufficient initial stability to prevent her taking a serious list if holed by a torpedo or a mine. It is desirable, of course, that the freeboard of the vessel should not be unnecessarily reduced by the addition of water-ballast, but if the nature or amount of the cargo, taken in conjunction with the amount of bunker coal on board, is such at any time that a sufficient margin of initial stability cannot otherwise be obtained, some or all of the ballast-tanks should be filled. The vessel should not, however, be overladen.

If the initial stability is not so ample as to prevent any danger of a serious list, and if the vessel is constructed with longitudinal bulkheads, such as wing bunker bulkheads, precautions should be taken to allow water which may enter the vessel to flow as freely as possible through the longitudinal bulkheads: for example, the doors of wing bunkers should in such a case be left open.

EMISSION OF SMOKE.

16. It should be realized that the presence of smoke which can be seen for many miles is often the only indication given to a submarine of the presence of a vessel.

Particular care should therefore be taken with the stoking of the boilers when in a danger-zone, so as to minimize the amount of smoke emitted. In this connection it is advisable to stoke lightly and stoke often, keeping the fires clean and even.

PRECAUTIONS AGAINST SHELL FIRE.

17. Wooden plugs should be prepared before the ship leaves port, and kept handy to plug up shell-holes. Suitable plugs can be made of spruce, about 2 ft. in length and about 8 in. in diameter tapering to 2 in.

LIFEBOATS.

18. The lifeboats attached to davits should, if possible, whilst the vessel is in the danger-zone, be carried in the outboard position gripped to spars, or secured in some other efficient manner so as to be ready for immediate lowering. Inboard boats should be transferred to the ship's side under davits ready for hooking on.

In order to provide protection for any passengers or seamen who may in an emergency be compelled to leave the ship without sufficient clothing, every boat should be furnished with a number of blankets rolled up tightly and properly stowed under the thwarts or elsewhere.

Boat drill should be practised and life-saving appliances examined as frequently as possible. Masters and officers should carefully inspect the boats and satisfy themselves that every lifeboat has on board all the equipment required by the Life-saving Appliances Rules, including a sufficient quantity of provisions and water in good condition; that plugs are always securely attached to the margin of the plug-holes; and that the boats' falls are so stowed as to be immediately available for use without liability to become fouled. For this purpose the falls should be wound on reels or stowed in some equally efficient manner.

Masters and officers should also impress on their crews that the safe lowering of a boat depends largely upon seeing that the falls are quite clear for running, and that while the boat is being lowered the men tending the falls lower in unison so as to keep the boat fairly level.

In order to prevent a boat coming down with a run, where lowering-bollards are not provided a round turn should be taken with the fall round the davit below the cleat before the falls are coiled.

Each lifeboat should be provided with two painters; one should be fitted with a strop and toggle, and the end should be led forward and kept belayed to a cleat or other suitable fitting fixed on the deck or bulwark, the boat's painter being coiled in the boat for use if required after launching.

In the case of lifeboats stowed on the poop or near the after end of the ship the cleats should be so placed that boats when lowered and freed from the tackles, with the ship light, will be held by the ropes clear of the counter and propellers.

The covers of all lifeboats and pontoon lifeboats should be taken off before entering the submarine area, and all obstructions, such as would prevent the lifeboats floating off the vessel's decks, should be removed, including the boats' gripes, when weather permits.

In order that they may have the best chance of floating clear, a number of the pontoon lifeboats (where such are carried) may, if necessary, be stowed elsewhere than abreast of davits.

LIFE-RAFTS AND BUOYANT APPARATUS

19. Every passenger-steamer which is or may be employed in a submarine area or danger-zone should be provided with life-rafts, buoyant deck-seats, or other buoyant apparatus suitably stowed on deck, in addition to the lifeboats and other appliances required by the Life-saving Appliances Rules. If possible the buoyant apparatus should be sufficient to accommodate 50 per cent. of the total number of persons on board.

20. Rafts and buoyant apparatus should be stowed in such a manner that they will be free to float off the vessel's decks on their gripes being slipped. They should not be lashed or have any fastenings other than gripes. Wire-rope gripes fitted with a short length of chain and a slip-link are considered the handiest form of quick release.

LIFE-JACKETS.

21. Life-jackets should be so placed as to be readily accessible, or issued to the persons for whom they are available.

In a passenger-ship the master must satisfy himself that every passenger has a life-jacket issued to him, has been shown how to put it on, and the correct position in which it should be