## The Disposal of Mounded in Maval Actions.\*

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In naval warfare all arrangements for the succour of the wounded must be subject to the condition that they do not in any way impair the efficiency of the ship as a fighting machine.

The difficulties met with are due principally to the occupation of nearly all the space below the armoured deck by magazines and engine rooms, and the high temperature produced there by the proximity of the latter, to the necessity for closing watertight doors and hatches, to the absorption of space behind shielded guns by ammunition hoists, fire mains, etc., and to the awkward entrances to casements and barbettes.

It can readily be understood that these interpose obstacles both to the transport of wounded along the decks and to their reception below, and they must be taken into account in devising any scheme, but, from the differences in size, construction, and armament of ships, it is impossible to lay down rules universally applicable.

It must be recognised that during an engagement the position of the naval surgeon corresponds to that of his army brother when attached to the firing line; he can merely take all possible measures to avert impending death from hæmorrhage, shock, or other causes, disinfect and dress wounds, remove foreign bodies, apply support to fractured limbs, give restoratives or morphine, or otherwise add to his patient's comfort. The dust and concussion produced by the guns of his own ship, and the possibility of the many paralysing accidents to which she is liable, to say nothing of the nervous tension inevitably consequent upon action with the unseen enemy, would all argue against his undertaking, until after the engage-ment, any operation not absolutely and at once necessary. Actions of any duration are, too, rather improbable under modern conditions, with quick-firing guns, and therefore restricted ammunition supply.

This being so, it is evident that different positions will be required, on the one hand for "dressing stations" for giving first aid during action, where the main objects to be attained are accessibility, protection, and non-interference with the fghting of the ship; and, on the other hand, for the operating room and sick quarters for reception of wounded after action, where cleanliness and asepsis, roominess and ventilation, light and water supply are the chief desiderata.

Dressing Stations.—The position of these must necessarily be a compromise, the place chosen being in each case decided by the peculiarities of the ship in question, and the following conditions being as far as possible complied with:

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2. They should be protected from the enemy's fire.

3. They should be readily accessible from those parts of the ship where men are likely to be hurt.

4. They should be cool, clean, well-lighted, recomy, and lofty.

The most convenient part of the ship—the middle—is either entirely absorbed or rendered insufferably hot by the engines, and the Japanese, therefore, found dressing stations both forward and aft necessary in most cases, thus dividing their already scanty *personnel*, but at the same time lessening the risk of such disaster as that in the *Hujei*, where one shell accounted for all the medical staff.

Professor Ogston some time ago suggested the possibility of cutting, in the armoured deck, a hatch large enough to transmit stretchers, and leading to a large, well lighted, and properly fitted room below. It is at least doubtful whether such a hatch could be left open, and also, whether sufficient space could be spared even in the largest Such a room, too, must be insufferably of ships. hot in action, and entirely dependent upon artificial ventilation and lighting, while its position must militate against surgical cleanliness. Even if sufficient space could be spared, it would have to be situated at one end or the other, and to have systems of ventilation by fans, and of lighting by accumulators, independent of the general ship's supply, which might fail at any time. Wherever these "dressing stations" are placed, therefore, it is suggested that in them should be kept only the instruments, appliances, and dressings for carrying out "first aid" or emergency operations, with beds. and mattresses upon which the wounded could lie.

Surgical Appliances .- The wholesale destruction of medical stores which resulted from shell explosion in no fewer than two of the Japanese ships would be absolutely fatal in an isolated ship action. Such a risk might, however, be greatly lessened by ensuring that all the fittings of operating room and sick quarters should be portable, light, and capable of easy stowage in an appropriate store room, well protected, and beneath the armoured deck. The difference between providing a comparatively small store room and providing a large room fitted for receiving patients during action will be readily appreciated. Here cculd be stored bedding and hospital gear, reserve dressings, aseptic portable operation table, washstands, irrigators, and so on, with the majority of instruments all ready for immediate use, while in the comparatively unprotected dressing stations would be kept only the stores for the purposes already enumerated, the loss of which would be



