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-MILITARY HOSPITAL SHIPS. -

Practical Notes for Medical Officers on the
Selection, Equipment, Organization, and
Administration of a Military Hospital Ship.

by

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- PREFACE.-

Beyond having travelled as a passenger on ships, and having spent the first year of the war on a hospital ship, I have had little experience of ship-board life. I cannot claim therefore the technical knowledge either of the professional sailor, or of the naval constructor, so in this treatise I must ask the indulgence of any professional sailor who may read this, both for phraseology which may not be nautical, and for possible errors revolting to a marine constructor.

The point of view is that of a doctor who performs is afloat, and the information is meant for the brother doctor rather than for the friendly sailor.

If however this chances to become a help to the constructor, by enabling him to see the matter from our point of view, it will be doubly justified.

MILITARY HOSPITAL SHIPS.

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- MILITARY HOSPITAL SHIPS. -

INTRODUCTION .

The necessity for Hospital Ships for our army, in case of war, had evidently been well considered, and allowed for, before the Great War started, as was proved by the fleet of ships which was so speedily acquired and equipped as hospitals after the declaration of war, not only for British but also for Indian Troops.

War waged on the world-wide scale of the recent war brought hospital ships into ~~sa~~ prominence never before evidenced in the history of war.

The need for providing hospital ship accommodation in increased ratio to the number of troops employed has been caused by the following factors, :-

Note. These notes were originally compiled in 1916 but were not elaborated during the war. In 1918 J. Wright & Sons, Bristol published "The fitting out and Administration of a Naval Hospital Ship." by Fleet Surgeon E. Sutton R.N. This volume shows the use of Hospital Ships from a Naval standpoint. Their work is allied to that of a Base Hospital, where patients are admitted, and treated, and whence they are discharged when cured. Military Hospital Ships in an emergency might have to be used in a like capacity, but such is not their real use.

In consequence the fitting and staffing, the equipment and administration of the two kinds of ships should be different in almost every respect.

- (1) Increased relative number of casualties.
- (2) The large number of areas in which active operations took place, and their wide distribution.
- (3) The large forces provided by India, Australia, New Zealand, Africa, and Canada as Expeditionary Forces each required their sick and wounded returned to their native shores, so necessitating long overseas voyages.

The ships provided at the beginning of the war were, I consider, models of "up-to-date" requirements, both for accommodation, and for medical and surgical treatment.

During a year's work on board a hospital ship, I have experienced duty in the hottest of eastern seas during the hot season, and also wintry conditions in home waters. In that time the ship carried Indian Troops, British Troops, and Australian and New Zealand Troops as necessity arose. My own duties were connected chiefly with administration, but were never without some medical or surgical work intermixed.

From such experience I have but little to add in the way of suggestions for drastic alterations to the original schemes of fitting, and scales of supplies of the first models handed over to us in the early months of the war.

From the experience of the South African War one was too apt to regard a Hospital Ship in the light of a floating Base Hospital, which took the permanently unfit away from Base Hospitals. One of the lessons

of the recent war has been how Hospital Ships have to be prepared for any class of illness or wound from the three hour old shell or bullet wound, to the chronic bronchitic who coughs his way home.

Though Hospital Ships will, as a rule, have return trips empty of patients, this will not necessarily be the case, as, for example, ships travelling to India with Indian sick from France and Egypt, and returning with British sick from India and Mesopotamia.

No scheme, to my knowledge, has yet been formulated for the organization and the administration of Hospital Ships, so these will be entered into in detail.

Since November 1914 I have boarded many Hospital Ships, and have noted their construction, fitting, and equipment.

Naturally different ships require to be administered for small details in slightly different methods to suit the ship's construction, but in the general broad outlines one sound method of administration should suit any ship.

I do not think that it is any exaggeration to say that no Hospital Ship fell into a good working routine for at least two months after its inception.

The problem to be faced by a Medical Staff on taking over a newly equipped Hospital Ship is one of no small magnitude. Stores, appliances, and equipment have to be found, checked, and sorted. The Staff has to be allotted duties to the best possible advantage. Dieting and other administrative duties have to be tackled. The

embarkation and disembarkation of sick, with its attendant necessity for nominal rolls, and other returns, is also apt to be a matter of some confusion to an inexperienced staff.

I am convinced that sound administration in a Hospital Ship is a "sine qua non" not only for effecting economy and ease in working, but also for harmony in the staff, and advantage to its patients.

Where a definite line of administration is adhered to, and regulations laid down for its execution, there is the certainty of that line of work being continued in spite of changes in the personnel, and ^{the certainty.} of the incoming staff having accurate data, based on experience, on which to build, instead of having to flounder in a bog of inexperience for a solid foundation.

I venture therefore to make such suggestions as might benefit Medical Officers employed on Hospital Ships, without trespassing on the ground of the purely Naval or Marine authorities, except where the opinions of Marine Constructors and Medical Officers may be equally necessary, and where consultation would possibly assist both sides.

- MILITARY HOSPITAL SHIPS. -

The subject of Hospital Ships lends itself to division under the following heads for discussion :-

- I. The selection of Ships for use as Hospital Ships.
- II. The "Fitting-out" and Equipping of Hospital Ships.
- III. The Organization and Administration of Hospital Ships.

Under the above three headings the main points will be dealt with which would affect a medical officer were his opinion asked, or his duties sought for on a Hospital Ship.

PART I.

THE SELECTION OF A SHIP FOR A HOSPITAL SHIP .

The selection of a ship for work as a hospital is a matter which concerns the Naval more than the Medical authorities. Whether or not a Medical man is ever consulted in the matter I am unable to say, but suggest that, if not, it would only be justice to the medical profession that it be given the opportunity to voice its opinion on the merits of every ship before it is adopted for Hospital Ship duty.

The requirements of a vessel proposed to be taken up as a Hospital Ship will now be considered seriatim in so far as a medical man may be asked to give an opinion.

(1) Fitness for service in all climates.

The events of the recent war, with its necessary transportation of large bodies of troops by sea over many

Fitness for service in all climates (cont.)

thousands of miles has necessitated the bringing of many Hospital Ships into tropical seas, which had never been fitted for work in hot climates.

Any ship may of course be taken up and fitted for special duty, such as "cross channel" work, river work etc.; but as far as possible all ocean going ships when fitted, should be regarded as candidates for duty in tropical seas, as well as ~~for~~ⁱⁿ home or temperate waters.

(2) Size.

Very large and very small ships may be made use of in special circumstances to meet special cases.

As regards ocean going ships, Hospital Ships of over 7000 gross tonnage will in many cases prove too large to permit of entry into small harbours, or into rivers where their passage might prove advantageous or even necessary.

The general utility of the small ship whose draught can be reduced to 15 feet, and whose beam is not excessive has been proved in the war by obstacles such as the bar of the Shat-el-Arab, and the entrance to the inner harbour of Boulogne being no hindrance to them.

A ship of about 7000 gross tonnage would, if suitably designed, be capable of providing cot accommodation for at least 400 cases, with the possibility of extension to 500 in an emergency. A ship carrying a number of from 350 to 500 is also convenient to handle from an administrative point of view. It has to be remembered that all wounded arrive at one time; that they

Size. (cont.)

are often on board for one, two, or three days.

It has to be remembered that during the time patients are on board each case has to be verified, and perhaps have papers made out or completed, that each case has to be examined, treated, dieted, and classed according to his injury or disease.--400 seems to prove an ideal number for convenient handling on long or short voyages.

Large liners, such as the Cunard Liners at one time employed, would be almost impossible for use on short voyages, and on long voyages, I suspect, were found too unwieldy to obtain good results either for individual treatment and attention to cases, or for embarkation and disembarkation, or for general administration.

(3). Sea-worthiness and Speed.

The qualities of a ship as to sea-worthiness should be no concern of a Medical Officer. The subject is only introduced here to emphasize the fact that sea-worthiness and stability in a big sea should always far outweigh advantages of pace. Pace in a Hospital Ship is of little moment. So far, I have not heard of any case where the addition or loss of two knots an hour would have made any difference to a ship's usefulness.

(4). Upper Deck Space.

The available deck space on spar, hurricane, and boat decks for ambulatory cases to make use of for sitting,

Upper Deck Space. (cont.)

walking, and even sleeping is a vital point in the suitability of a ship when a journey may extend over weeks. Not the space alone but also the accessibility of that space for cases to whom a ship's companion may offer an almost insurmountable difficulty has to be considered. From the total deck space has to be deducted, as unavailable for sick, space required for ship's officers and crew, for hospital personnel, and for those necessary and unavoidable deck houses e.g. latrines mortuary etc.

When examining the decks the absence of ventilators in important positions, such as would interfere with the free passage of stretchers along the deck, has to be favourably considered. The sprinkling of a deck with ventilators, - a custom favoured by designers of less modern years, - has much to condemn it from a point of view of facility in "fitting". I have known of a hurricane deck being quite inaccessible to a patient on crutches without a ramp of elaborate and expensive design having to be made to circumvent an awkwardly placed though necessary ventilator. The deck cranes or derricks must also be situated so as not to block an alleyway through which stretchers have to pass. The cranes must be in smooth working order as they often have to be used for the embarkation or disembarkation of patients.

(5). "Between decks" space for Wards.

In Hospital Ships the majority of the patients will

"Tween decks" space for Wards. (cont.)

have to be accommodated in Wards constructed in the "Tween decks" i.e. the main and lower decks.

The ~~"Tweendecks"~~ suitability of the "tween decks" for wards is then a matter of paramount importance.

- (a) The height between decks should not be less than 9 feet.
- (b) If there is not a sufficiency of scuttles, that the making of more be feasible.
- (c) It is almost essential to have a clear run from stem to stern through the wards, with alleyways broad enough to allow the passage of a stretcher. In some hospital ships the only means of access to the engine room and stoke hold was through a ward of the hospital. This is a serious defect, and should be considered a serious disadvantage to a Hospital Ship.
- (d) Each ward should, if possible, have its own hatch. If any ward has not got its own hatch opening to the open air, free ventilation must be ensured by a shaft or casing.
- (e) Space for store rooms must be recon^koned on. If X Ray room, and Invalids' Effects rooms be included in this space it will be found that roughly an area of two-fifths to one half of the total areas of the wards will be required. Store rooms below the wards are most convenient. Extra decks may have to be built for store room accommodation.
- (f) All decks should be wood covered.

"Tween decks " space for wards. (cont.)

(g) It is preferable that the decks be supported by roof girders rather than by stanchions.

6. Refrigerating Plant.

A refrigerator capable of carrying supplies necessary for the sick and staff in addition to the requirements of the ship's crew is a necessity.

7. Cabin Accommodation.

The use of a Hospital Ship can be enhanced if a certain amount of first and second saloon accommodation, in excess of what is necessary for the permanent staff can be maintained ~~x~~ "in statu quo".

Of the patients carried who are entitled to first or second saloon accommodation only a few are, as a rule, cot cases. The almost universal preference of officers for cabins to wards allows the wards to be used for cot cases and cabins for slighter cases, and so permits of a larger number being carried.

Save in exceptional circumstances a Hospital Ship travels empty of patients in one direction. Medical personnel, and medical stores can be transported on these return voyages, and insufficient cabin accommodation on Hospital Ships has many times been the sole cause of Nurses, Doctors, and other medical staff having to travel on transports.

From personal experience the retention of a few spare cabins for passengers and slight cases was fully justified.

Saloon alleyways must be capable of accommodating

Cabin Accommodation. (cont.)

loaded stretchers.

Officers' Wards (generally constructed in first saloon accommodation) must permit of the entry of loaded stretchers and of their access to each bed in the ward.

8. Gangway Ports.

Gangway Ports in the ship's side, and on the same deck as the main wards are often a matter of great moment. Both in loading and unloading they may give direct access to and from wards, so avoiding both a long carry over decks and through a maze of alleyways and also avoiding the tedious use of lifts.

Items of importance in a ship to be selected for Hospital Ship purposes might be enumerated "ad infinitum" and it would serve no useful purpose to mention them here, as they scarcely come within the sphere of the Medical Officer .

Certain matters of import e.g. fresh water storage and distribution. salt water pipe circulation, and dynamo capacity have been purposely omitted as they are discussed in Part II.

The above 8 points have been specially selected not because they are necessarily the most vital points, but because each bears on at least one quite important point too often unconsidered, or perhaps thought by others too trivial to merit consideration.

-PART II -THE "FITTING OUT " AND EQUIPPING OF HOSPITAL SHIPS.

The "fitting out" of a merchant ship for use as a Hospital Ship is greatly a matter of "Cutting one's coat according to one's cloth,"

Experience has shown the advisability of many minor modifications in original models, and attention will be directed for the most part to points of divergence ~~fr~~ from these originals and not to a detailed description of all furnishings and fittings of a modern complete Hospital Ship.

It is opportune at this place to suggest that it is unnecessary to fit and label ships respectively for carrying British or Indian troops. Any ship should be ready at a few hours notice to carry either class. The ship to which I was appointed early in the war was fitted for Indian troops only. It was recognised that only small changes would be required in order to accommodate British sick, so a scheme for the necessary alterations was prepared and kept in readiness. The opportunity for testing the efficiency of the ship as a hospital for Europeans was in due course given. The change was quickly effected and worked up to the best expectations. The only additions to the staff requested were a few Nurses, European cooks and bakers, and British Orderlies for the distribution of food. From that time onwards all necessary changes to carry Indian after British sick, or vice versa could be

THE "FITTING OUT" AND EQUIPPING OF HOSPITAL SHIPS.

~~3044~~ carried out in under two hours.

I. PRELIMINARY CLEANSING.

The necessity for a preliminary thorough emptying and cleansing of the ship right down to the bilges (which should be cleaned, dried, and disinfected.) cannot be too strongly emphasized.

II. AVAILABLE SPACE.

Before going into any detail of space to be allotted for wards etc. let us consider in broad outline the general conformation of practically all ships.

The P. & O. S.S. Syria, which was used as a Hospital Ship throughout the war, has been taken as a model for the diagrams and as a type for the text.

The hold of the ship is broken up by a large central mass which is not available for hospital use as it contains the ship's engines boilers and coal bunkers.

Diagram No. I represents a mesial longitudinal section of a ship

A.B. represents the main deck of the ship on which may be built the upper decks viz. C.D. Upper Deck

G.H. Hurricane Deck

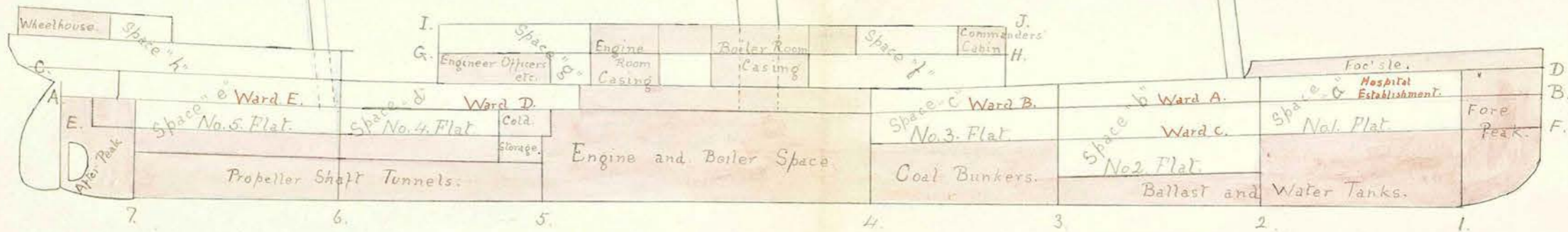
I.J. Boat Deck.

also poop and foc'scle.

Similarly below the main deck other decks may be built in

E.F. Lower Deck.

DIAGRAM No.1.



Elevation.

- A.B. Main Deck.
- C.D. Upper Deck.
- E.F. Lower Deck.
- G.H. Hurricane Deck.
- I.J. Boat Deck.

No's. 1 to 7 Waterlight Bulkheads.

Parts coloured red are not available for hospital use.

DIAGRAM No.2.



Upper Deck.

Parts coloured red are not available for hospital use.

Scale 1/4" to 1'

DRAWINGS OF P. & O. S.S. SYRIA.

DIAGRAM No.3.

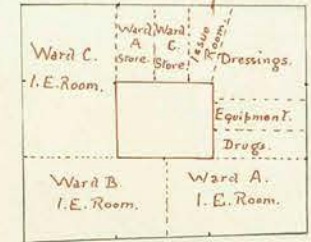


Main Deck.

No's. 1 to 7 Water-tight Bulkheads.

Parts coloured red are not available for hospital use.

DIAGRAM No.4.



No. 2 Flat.

Lower Deck.

DRAWINGS OF P. & O. S. S. SYRIA.

Scale 1/80" to 1'.

THE "FITTING OUT" AND EQUIPPING OF HOSPITAL SHIPS.AVAILABLE SPACE (cont.)

Transverse watertight bulkheads (numbered 1 to 7 in Diagram 1.) further subdivide the space so making a series of compartments which are limits beyond which extension of each ward cannot be carried; though passage from one compartment to another may be obtained by means of watertight bulkhead doors. Practically all further subdivisions of space consist of panelling easy to remove and more or less easy to replace.

The main spaces left then are those marked a, b, c. d. and e. in the hull of the ship, and f. g. and h. as superstructures.

These spaces however are only partially available for hospital use, as the lower parts of d. and e. accommodate the propeller shaft tunnels.

Water and ballast have to be stored ~~and~~ and quarters found for the ship's crew. Ship's stores, purser's stores, galleys, each require their site, and farther certain parts must be left severely alone for the navigation of the ship.

Diagram No. I shows roughly, in red, the space required for the ship, the remaining uncoloured portion being what is left for hospital purposes.

Similarly Diagrams Nos. 2. 3. and 4. show the plans of the upper, main, and lower decks of the same ship.

III. ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.

One can now discuss the utilization of the available space to the best possible advantage, and to do this we should consider what has to be fitted into this space.

The following are essentials:-

- (1) Large Wards a. For Cot cases.
 b. For Ordinary and Ambulatory cases.
- (2) Wards for Officers
- (3) " " Warrant Officers.
- (4) " " Infectious Cases.
- (5) " " Mental Cases.
- (6) " " Venereal Cases and Small Wards.
- (7) Inspection Room.
- (8) Operating Theatre.
- (9) X-Ray Room, and Photographic room.
- (10) Dispensary.
- (11) Laboratory.
- (12) Office.
- (13) Galleys.
- (14) Store Rooms.
- (15) Invalids' Effects Rooms, and Ward Store Rooms.
- (16) Baggage Room.
- (17) Lifts.
- (18) Mess Table Accommodation.
- (19) Pantries.
- (20) Quarters for Establishment.

III. ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.

(cont.)

- (21) Deck Space for ambulatory cases.
- (22) Mortuary.
- (23) Laundry and Soiled Linen Store.
- (24) Tailors' Room.
- (25) Guard Room.
- (26) Disinfector.
- (27) Duty Room.

In addition to the above, sufficient first and second saloon accommodation must be retained as well as smoking rooms, or reading rooms for persons inhabiting first and second saloon accommodation.

It is obviously idle to lay down any definite plan ~~in~~ for the arrangements of a ship as the infinite differences in design call for different handling in every instance.

Such being the case it will be best to take the different items seriatim and to deal briefly with ~~the~~ the less obvious requirements of each.

1. Large Wards.

Cot Case and "Ordinary" Wards.

The system of fitting some wards with swing-cots for serious cases, and others with double tier fixed cots for less serious and ambulatory cases has everything to commend it. When a ward is fitted with ~~swing~~ swing cots it accommodates only one third of the number that double tier cots allow; yet the loss in accommodation is justified by the increased facility

Large Wards. (cont.)

for nursing and dressing.

Even the examination of cases in double tier fixed cots is a matter of considerable discomfort and difficulty for the Medical Officer.

Serious case wards should be large and airy and have at least 850 cubic feet per bed whilst double tier wards may be congested to a matter of 330 cubic feet or even less.

In selecting the wards to be utilized for serious cases the following factors must be considered.

- a. Accessibility for stretchers.
- b. " to the Operating Theatre.
- c. " " " X Ray Room.
- d. Good light and ventilation.
- e. Situation above the water line.

Latrines cannot be fitted in wards close to or below the water line, and this necessitates the carrying of slops to a higher deck. Low level wards can rarely have their scuttles open and generally have only indirect ventilation.

It is not necessary for more than one third of the total cots to be of the serious case variety. Even when working the Gallipoli beaches, where the sick were embarked generally direct from the firing line, it was found that less than 30% were entirely confined to bed.

Large Wards. (cont.)The general requirements of large wards are:-

- a. The large wards of a Hospital Ship will as a rule occupy the main deck and in cases also the lower deck.
- b. The possibility of building extra decks under the wards for store accommodation has to be considered.
- c. As before mentioned the limit in size of the wards will be determined by the watertight bulkheads.
- d. Every large ward should stretch right from port to starboard of the ship to ensure free ventilation.
- e. The height between decks should not be less than 8 feet.
- f. The distance between scuttles should be 6 feet.
- g. The diameter of the scuttles should be at least 1 foot.
- h. The deck should be boarded.

The fitting up of large wards.a. Floors and Walls.

Decks to be used as wards are presumably steel covered with wood. The wooden deck may be planed and polished, but it is much easier ~~and~~ to keep, and as efficient if linoleum or other such non-absorbent material is glued down on the wood.

All walls, stanchions, cots and woodwork should be

The fitting up of Large Wards.a. Floors and Walls. (cont.)

Painted some restful colour such as pale green.

Roofs should be painted with white ZINC paint.

Grey paint is best for scuppers and latrines and ~~sh~~ should be painted as a dado about 6" or 8" from the floor all round to minimize unsightly discolourations from knocks during scrubbing of decks etc.

b. Companions and Hatches.

Each ward should have its own companion to the upper deck. These companions should be sloped as much as possible, and have strong hand rails on both sides.

The exits of these companions to the open should be guarded by booby hatches.

All hatches should be railed round and covered with strong latticed wooden hatch-covers in sections to permit of easy removal for cleaning.

The openwork hatch-covers allow extra light and ventilation in good weather.

In connection with each ward the following are required.

c. Bathrooms, Latrines, and Wash-houses.

Each ward should have its own bathroom, wash-house, and latrine in a part partitioned off from the main ward which must have a ventilator to the open air.

Wards require one bath per 50 beds in cot case wards and double that number in convalescent wards.

Latrines should have double doors, the outer door lead-
-ing

The fitting up of Large Wards.c. Bathrooms, Latrines, and Wash-houses. (cont.)

merely to a passage from ~~the~~ ^{which} all the latrines and bathrooms take off.

The open pattern of latrine for squatting, as provided for Indian troops, should be universally used and to this removable wooden seats should be fitted for the use of British troops.

Wash-houses should be fitted with folding basin racks. All floors should be cemented and sloped to the scuppers.

All fresh water taps should be of the "push" pattern to avoid waste.

Baths should be fitted with steam pipes for hot water supply.

The building of these rooms in one group makes for economy in space and material, and if the partitions between each stop 1 foot short of the roof one ventilator may serve the whole group.

Bathrooms should all be located if possible on one side of the ship. They will naturally occupy the side more convenient to the salt water pipes already present.

A set of bathrooms, latrines and wash-houses should be built for the establishment beside their quarters, and apart from those for the Wards.

The fitting up of Large Wards.d. Sink Hopper Room.

The sink hopper room will be used by Nurses and so should be separate from the bathroom block.

In this room the bed-pans, urinals etc. are stored on a special rack.

e. Side Rooms.

In most ships wards have not been allotted sufficient cupboard and store accommodation.

A store room will be allotted to each ward in an adjacent flat.

Off the ward there must be a "side room" with cupboards, shelves, drawers, table, and sink with hot and cold water.

This room is in charge of the Nurse or senior nursing orderly of the ward who will keep the key.

The side room will almost invariably encroach on the possible cot space of the ward.

f. Invalids' Effects Rooms and Ward Store Rooms.

Invalids' Effects Rooms and Ward Store Rooms will not be in the ward under any consideration, As they are not then ward fittings they will be considered later.

g. Pantry.

It is, I think, unnecessary to have a separate pantry for each ward. Instead pantries should be in connect-

The fitting up of Large Wards.g. Pantry. (cont.)

Connection

with Mess tables. A group of three serious wards each accommodating 36 patients might easily arrange one set of dining tables with a central pantry.

Possibly only 60 of the ~~90~~¹⁰⁰ patients would be fit to feed at the mess tables.

h. Messing Accommodation.

The question of allotting space for dinner tables is a difficult one. It is preferable to have them outside the ward, for instance in a convenient cross alleyway, or well lit "flat". As they may however encroach on the possible space left for cots, the matter has to be borne in mind.

i. Soiled Linen Room.

Some kind of receptacle for soiled linen is necessary for each ward. Zinc lined rooms which are fitted in many ships are insanitary, and too big for their requirements. A large zinc lined chest would suit the purpose admirably, and be removable for cleaning.

j. Lighting, Heating, Ventilation, and Telephones

will each be dealt with later as they affect the whole ship.

k. Lifts.

Lifts will not encroach materially on the cot space

The fitting up of Large Wards.k. Lifts. (cont.)

of the ward as they will be in the unused space in the railed-in hatches. Freedom of access to the lifts has however to be retained.

l. Pigeon holes.

It is a moot point whether or not pigeon holes for each ward are necessary. Certainly they are very little used.

Each man's kit is stored in the invalids' effects rooms, and what he has to retain is so little, that the tidiness of his cot need not be affected.

m. Sterilizers.

A large and a small sterilizer should be fitted in each ward,

n. Drinking Fountains

are also necessary in each ward.

o. Key Boards.

The continual losing of keys on a Hospital Ship is a source of constant worry, and apparently is unavoidable. To help to obviate this, every possible device should be used to reduce the number of locks.

A set of drawers can be locked by a hinged strip of wood with one lock instead of having a separate lock for each drawer. At the sacrifice of a little

The fitting up of Large Wards.o. Key Boards. (cont.)

~~11023x~~ space, one outside door can often lock a corridor to a series of bathrooms or store rooms.

Each ward should have its keyboard enclosed in a glass fronted case where every key hangs on its labelled hook, and to which case there are duplicate keys held by the head nurse and the Medical Officer.

Dressing
p. Dining Space.

In addition to the above fittings for each ward, we have still to remember to allot space for the medical, surgical, and nursing work to be carried out.

This space I have called the "Dressing Space". In this space, or at hand to it, are required a wash-hand basin, a table, a wheeled trolley, large bottle racks for lotions, and smaller racks for patients' medicines etc.; there should also be two cupboards.

Benches should be fixed in this space for the seating of patients whilst being dressed.

q. Cots.

From the above notes on rooms and fittings it will be seen that the amount of room for cots has been filled up to a considerable extent.

A Hospital Ship differs in one fundamental principle from an ordinary hospital in that it has a double purpose to fulfil- viz. treatment and transport. It cannot be definitely stated that one purpose is

The-fitting up of Large Wards.q. Cots. (cont.)

subservient to the other, but certainly each, in many ways has to give way to the other.

Our object then is to fit in as many cots as possible/always holding in view that treatment has to be possible, though at some disadvantage.

As mentioned above cots are of two kinds;

Single Cots usually in pairs placed end to end.

Double tier cots placed end to end in rows of varying numbers according to the space available.

A ward of 50 feet by 70 feet when fitted will accommodate about 36 single cots or 90 cots of the double tier variety. Space for mess tables may cause a reduction in the above numbers of cots.

Single cots should be freely accessible all round. Every cot on the ship must be accessible for a stretcher.

Every cot should be clearly numbered by a metal disc affixed to it, and not by numbers painted on it.

Every cot should have affixed to it by hooks

a, A spiteon.

b. A diet board constructed to carry a case sheet, and a coloured ticket to indicate the particular diet the man is on.

The following special cots should be available on every ship.

Cots for exceptionally tall men.

Cots for standing on deck in the open air.

The fitting up of Large Wards.g. Cots. (cont.)

Rigid cots for water beds for spinal cases.

Suspension cots for hanging on hooks.

Cots for fracture cases.

The spaces then available for large wards are shown in Diagram I . On the main deck spaces b. c. d. and e and space b. on the lower deck. The same spaces are shown in plan in Diagrams 3, and 4. and are similarly lettered.

2. Officers' Wards.

Officers' Wards should not differ in any material way in type from a large serious case ward.

Extra wash-hand basins may be fitted and small chests of drawers are a useful addition.

Proximity to the first saloon galley is an important point. It is better to have two or more small wards than one large one.

It is generally feasible to partition off part of the first saloon as an officers' ward, as the full size of the first saloon in a ship is rarely necessary in a Hospital Ship. Vide Diagram 2.

Three or four cabins with their alleyways knocked into one room make quite a good ward for 6 officers.

As before mentioned spare cabin accommodation should always be kept in reserve.

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.3. Warrant Officers' Wards.

A ward similar to that for Officers should be made from available accommodation in the second class saloon. Vide Diagram 2.

4. Infectious Wards.

As far aft in the ship as possible space should be found for two or three small wards for infectious cases. These wards should be self-contained, and not communicating with any other wards or accommodation in the ship.

They should be built so that they can be easily sealed for sulphur disinfection. They are usually built and situated so as to make any vapour disinfection impossible. Vide Diagram 2.

5. Mental Wards.

On most ships the mental wards consisted of two or more padded cells situated in the deepest and darkest part of the ship. This is mentioned only to condemn it. Padded cells have their uses, but when the treatment of insanes is restricted to imprisonment in padded cells one is not surprised to find insanes less sane at the end of a voyage than at the beginning.

During the war insanes formed an unexpectedly large percentage of cases carried.

On board ship the temptation for insanes to jump

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.5. Mental Wards. (cont.)

overboard is enormous, and many have been the accidents.

The ideal mental ward should be light and well ventilated, and to which the padded rooms are adjuncts.

It should have easy access to a portion of deck where the insane patients can have daily exercise. This portion of deck will be guarded by netting to prevent insanes from throwing themselves overboard.

The door leading to the insane wards should be strong, and have drawn wire panels to permit of inspection from without.

Precautions have of course to be taken with scuttles. Beds should be fixed. Each bed should be visible from the outside alleyway, without an attendant having actually to enter the ward.

Diagram 2 shows very suitable provision for mental wards. It may be noticed that adjacent to these wards is the second saloon companion which leads to the poop deck on which the insanes may be exercised.

These wards should not be labelled, and if no insanes are on board may be used for ordinary cases.

6. Venereal and small Wards.

It is essential for venereal cases to have a separate ward with their own lavatories and latrines.

These wards may be fitted with double tier cots. Vide Diagram 3.

In addition to the above wards, it is always an

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.6. Venereal and Small Wards. (cont.)

Advantage to have one or two small wards with two or four cots each, for use in an emergency.

The fitting of such small wards is not as a rule any waste of room as they can always be occupied, and if extra small wards are at any time required, a transfer of patients can bring them into their special use.

It may happen that there are extra Officers, Warrant Officers, or Mentals to what the ship can ordinarily accommodate. It may happen that any special wound or disease may make it inadvisable for a case to be in a large ward, when the small ward will be called into use. Such are only examples of the many cases where a small extra ward is of great use.

7. Inspection Room.

With the transformation of a ship from its usual work to that of a Hospital Ship, the Ship's Doctor has been evicted and probably the Dispensary removed.

It will then fall to one of the Medical Officers to attend to the sick of the crew, as well as to the sick of the hospital establishment.

A definite place, preferably near to the Dispensary should be allotted for seeing the "morning sick" of Ship and Hospital.

A place which is well lit should be chosen.

Vide Diagram 3.

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.8. Operating Theatre.

The operating theatre must be freely accessible for stretchers from any part of the ship.

It should be as near mid-ships as possible.

If there is any choice of places preference should be given to the place most at hand to the serious case wards.

All shelves tables etc. should have guard rails.

All furniture must be fitted so that it can be immovably fixed in rough weather.

9. X-Ray Room.

It is very doubtful whether the small use that X Rays are put to, even on long voyages, justifies their being fitted as a routine fitting to all ships.

Their value on Hospital Ships is not, I consider, sufficient to justify the extravagance of such a costly fitting. If however X. Ray Rooms and Dark Rooms are fitted both of these must be properly ventilated by means of an electric exhaust fan in a tunnel. A fan merely stirring the air is quite useless.

10. Dispensary.

The Dispensary requires to be of fairly large size. 20' by 30' is a good average area.

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.10. Dispensary.

It should be situated on the same deck as most of the wards and be placed as centrally as possible.

All fittings have to be firmly fixed, and it requires a large number of bottle racks for large lotion bottles, and stock mixtures, and also for small bottles which are temporarily in the Dispensary to be filled.

These racks are placed by preference on the ground, and can often occupy unused corners, spaces below tables etc. Everything has to be guarded against breakage, so a rule should be made that bottles and glasses must always rest in a rack.

More use will be made of drawers than is done in a shore dispensary, and here again every device should be used to reduce to a minimum the number of locks.

Possibly two or three ^{locks} could be made to serve every drawer and cupboard in the dispensary. As in the wards the keys should be kept in a glass fronted box in the dispensary itself.

Each Medical Officer should have in his possession a key for the dispensary.

The door of the dispensary should ^{be} be in an upper and lower half; the lower half having a folding counter on the inside where medicines etc. are supplied to orderlies.

The dispensary should contain a complete list of its contents for reference.

Diagrams 2 and 3 show alternative positions for the dispensary and operating theatre.

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.11. Laboratory.

A small room should be set apart as a Laboratory. Vide Diagram 3. This room should have a fresh water tap, a sink hopper and a bench. The bench is fitted with drop bottles in a rack, and a glass or porcelain slab let into it, on which to stain slides. A Xclamp should come through the bench for fixing the microscope when it is not in use, and over all fits a glass bell jar round the base of which a beading is fitted.

A microscope unless covered rapidly deteriorates at sea.

A shelf should be fitted on one wall carrying a row of urine test glasses to which a rack is fitted.

A special small tray fitted with slide jar, spirit lamp, and small bottles containing alcohol, and water, each article fitting in a rack, should be kept in the laboratory ready to be taken to any ward to take blood slides.

12. Office.

The office of a Hospital Ship is generally constructed without regard to the amount of work it has to cope with. In a ship carrying 300 to 500 sick there is sufficient office work to keep one Officer and two clerks fully employed. The office is, as a rule, too small for one clerk and the records.

Either in one or two rooms, there must be desk

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.12. Office. (cont.)

accommodation for three people, for a typewriter, book shelves; and all other available space can be taken up with pigeon holes without there being too many.

The majority of pigeon holes should be of foolscap size. 10" wide by 6" high by 15" deep is the size which holds the ordinary type of file cover.

No diagram has been given of the plan of the hurricane deck, as that, and the boat deck are very variable in the structures they carry. On the hurricane deck there will generally be found sufficient accommodation for the administrative Medical Staff and offices: first saloon and smoking room.

The poop deck will similarly provide for some second class accommodation, clerks office, second class smoking room etc.

The ship's officers' cabins will usually be on the boat deck.

13. Galleys.

Cooking galleys should always be fitted with ovens even although the ship is primarily intended to carry Indian Troops, as it enables British Troops to be catered for when necessary. The Indian can cook his food as easily on a range as on an open fire.

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.13. Galleys. (cont.)

Spare circular iron plates can always be carried, and speedily erected over "chulas" for the cooking of chupatties by Indians.

One cook house should suffice for 100 men.

A cook house may have to be set apart for a bakery for British Troops. Sometimes arrangements are made that the ship's bakery supplies all the bread.

The cook houses are practically always temporary deck structures.

Each galley must have a store room attached to it for keeping its supplies.

14. Store Rooms.

The amount of stores and baggage to be carried on a Hospital Ship is very considerable, as the Government supply is a liberal one such as will suit all climates and emergencies.

The stores cannot be packed like cargo, but have to be sorted and arranged so that every separate item is easily obtainable.

As will be seen later, the kinds of stores are numerous.

It might almost be taken as an axiom that no store room should occupy a place which otherwise might be occupied by a cot.

On reference again to Diagram 3 we find we have

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.14. Store Rooms. (cont.)

allotted the whole space of the main deck to wards.

In Diagram 4 Space "b" alone is occupied by a ward, and from Diagram 1 it may be seen that there is yet another space vacant below space "b" of the lower deck.

A plan of this space is shown along with Diagram 4. and is called No. 2 Flat.

The various classes of stores are:-

- a. Quarter Master's Stores consisting of Rations, Clothing, Cooking utensils etc. which are relegated to the charge of R.A.S.C. or S. & T. Warrant Officer and his staff.
- b. Medical stores and Equipment in charge of the Medical staff.
- c. Admiralty, and Ship's Company stores which are held in charge by the Ship's Commander and which generally are handled by one of the ship's Officers.

In the question of store rooms again, great advantage is gained if a free run is obtainable through the wards from end to end of the ship, as the duplicating of store rooms becomes unnecessary.

It makes for ease in working if all similar stores are in one place.

a. Quarter Master's Stores.

The ration and clothing store is the largest and most used store, and so should be given priority

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.14. Store Rooms.(cont.)

Quarter Master's Stores. --of place in the ship.

The Quarter Master's stores will be used daily for the issue of rations etc. for every ward and galley on the ship, and therefore should be located conveniently for that purpose, and also should be situated conveniently for the loading of stores when in port.

This store especially, but in fact all stores, should be quite separate from any ship's stores.

The Purser's stores will probably occupy part of this store area, but it is highly important that these ship's stores should have a separate companion, and be completely boarded off from the hospital stores.

The store rooms required for this section will be

- a. A large ration store.
- b. A smaller " " , for "turn over".
- c. A ration issue store.
- d. A large clothing store shelved to the roof all round.
- e. A miscellaneous store, fitted with shelves, for cooking utensils, tailor's and laundry supplies etc.
- f. A blanket and linen store.
- g. If possible, one spare store.

If it is found impossible to mass all these stores in one place, then a. b. c. and e. would be together and d. and f. in another place.

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.14. Store Rooms (cont.)Quarter Master's Stores.

There is yet another store which is necessary, but which must be placed elsewhere; and that is the vegetable and potato store. This must be placed in the open air. It is a crate rather than a box, and generally finds space on the boat deck, or on the roof of some deck structure aft.

All ration stores should be made rat proof. Fine meshed wire netting might answer the purpose.

On reference to Diagram # it may be seen that Flats 1, 2, 3, 4, and 5, are still empty and so available for conversion to store rooms. Below "space b." of the lower deck the extra deck may have to be built for Flat No. 2.

Flat No. 3, as will be seen later, will be used for another purpose, so will not be available for store accommodation.

The most central space left then is Flat No. 4., and this should be the Quarter Master's Stores.

Its only lighting will be from the hatchway above and, of course, electric light.

The hatch in the floor of this flat is 26' by 22', and as it is unnecessary, its combings should be removed and the space decked over, leaving only two central removable panels to give access to the propeller shaft tunnels below.

The hatches in 1, 3, and 5, flats should be similarly

14. Store Rooms. (cont.)

Quarter Master's Stores.

dealt with.

Diagram 4. gives a useful arrangement of store rooms for this flat.

The three ration stores should communicate with each other from inside, and each will have its door on to the flat which bolts from the inside. The central store only will lock from the outside with a key. Similarly the clothing, utensil, and blanket stores can all communicate, and only one of them lock from the outside.

If there is no other space available adjacent to Ward D. a place must be found in this flat for the Ward D. Store Room.

It is a useful precaution to separate the clothing stores from the ration stores by the spare store and the utensil store, because the ration store will collect most of the rats on the ship, and clothing stores, if contiguous to the ration stores, would be more likely to be attacked by rats.

b. Medical Stores.

The medical stores are bulky and varied, but if the administration is good should not be in such constant use as is the ration stores.

Flat No. 2. would be in every way the most suitable as it is near to the serious wards, and to the dispensary.

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.14. Store Rooms. (cont.)Medical Stores.

The medical stores may be roughly divided into

- a. Drugs.
- b. Dressings.
- c. Equipment and Instruments.

The store rooms necessary for these are :-

One for drugs which has deep shelves all round and most of which carry bottle racks.

One for equipment and instruments, which is also shelved, and which should contain a chest of drawers for small instruments.

Two stores are required for dressings - one large one for holding bales of dressings, and another which is shelved for broken bales. This second one is the issue store.

A diagram of flat No. 2 is shown with Diagram No. 4.

It will be noticed that it also contains the Invalids' Effects Rooms for Wards A, B, and C.

c. ~~From~~ Admiralty, and Ship's Stores.

No. 1 Flat up to now has not been touched, so may be handed over entirely to the Troop Officer and the Ship's Officers. It is below the quarters occupied by the Establishment and ship's crew, and therefore is convenient for the crew, and saves their entry into the hospital.

The Troop Officer or officer in charge of the hospital decks will have on his charge :-

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.14. Store Rooms. (cont.)c. Admiralty, and Ship's Stores.

All blankets, mattresses, pillows, linen, lifebelts, and cleaning gear; also cutlery dishes etc.

As soon as routine is established, the amounts of these articles in his stores will only be reserve stock.

He will require :- 1 blanket and linen store.

1 mattress store.

1 utensil store.

1 small store for paints and disinfectants etc.

It will probably be found that the hospital has had to make use of accommodation formerly used by the Chief Officer for storing awnings etc. and by the Purser for linen etc.

Almost certainly room could be found in this flat to recompense for this deficiency.

Diagram No.4. shows the allotment of rooms in Flat No. 1.

15. Invalids' Effects Rooms and Ward Stores.

Each ward requires two store rooms viz. one for Invalids' Effects, and one for Ward Stores.

The necessity for an Invalids' Effects' Room is obvious. Such a store consists of a large pigeon hole for each cot in the ward, and also should have a corresponding clothes peg. Each pigeon hole and peg

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.15. Invalids' Effects Rooms, and Ward Stores. (cont.)

bears the number of the cot to which it belongs, and here the kit of the invalid is stored whilst he is on the ship. This store has other uses which will be seen later.

It is essential that each Invalids' Effects Room has its own key, which is always kept by the Medical Officer of the ward to which it belongs.

For each ward there must also be a store room for storing spare bedding, and the other numerous and necessary articles for ward use which are not required every day. The use of this store will be considered further under administration.

Flat No. 2. holds the Invalids' Effects Rooms for Wards A, B, and C. AND THE after wards rooms are in No. 5 Flat as shown in Diagram 4.

16. Baggage Room.

A baggage room is necessary for carrying the baggage of the staff, of sick Officers and Warrant Officers, and for miscellaneous stores e.g. Red Cross Gifts. This can be fitted into No. 5. Flat along with the Invalids' Effects Rooms for Wards D, E., and the various small wards.

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.17. Lifts.

Lifts should be of three kinds.

- a. for patients,
- b. for stores and baggage,
- c. for food.

The obvious location for lifts is in the hatch ways.

a. Lifts for patients.

Gangway ports in the ship's side can often effect a much quicker embarkation or disembarkation if the wharf happens to be at a convenient level, but in the most favourable cases it is generally necessary to resort to lifts to get the patients up from the wards below the main deck level.

In some ships long gently-sloping ramps can be fitted at a sufficiently small gradient to permit of stretchers being carried up them, but the extra space required for such bulky structures negatives their use.

In a small ship carrying about 350 patients it will usually be sufficient to have two lifts for raising and lowering patients. There should be one forward and one aft. More lifts however might be necessary if wards do not intercommunicate.

The processes of embarkation and disembarkation can be ~~be~~ very greatly speeded up, if the main deck has a clear run from stem to stern, as both the fore and aft lifts can be used for handling the cot cases for Wards A. and C.. Lifts placed in hatches 2. and 4. will

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.17. Lifts. (cont.)

suffice for all the cots on the ship.

It must be possible for a case on a stretcher to be taken from any cot to any other, or to the promenade deck, operating theatre, X Ray room, and lifts are the only solution to this difficulty in many cases.

The type of lift generally adopted on Hospital Ships will, I hope, undergo modification before Hospital Ships again have to be fitted out. A cot slung between two rails, and operated by a hand-winch for raising and lowering is slow, laborious, jerky, and uncertain.

Modern ships are fitted with hydraulic capstans and cranes, and I hope to see modern Hospital Ships fitted ^{with} hydraulic or electric cot lifts.

Baggage and Stores Lifts.

Baggage lifts are not an absolute necessity as are cot lifts, but are certainly highly advisable, not only for the loading and unloading of patients baggage, but also for loading stores in port.

A simple lift worked by a hand-winch and tested to carry 224 lbs. could be fitted with little expense in at least two hatches in the ship.

This fitting would not only greatly facilitate the loading of stores, but also save a great amount of unnecessary traffic through, and fouling of, clean wards.

Food Lifts will be dealt with in the next section.

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.18. Mess Table Accommodation.

Somewhere on the ship space has to be found for Mess Tables for at least 70% of the number of cots on the ship. As far as possible the sites for these tables should not interfere with cot sites.

The store room flats, if well lit, offer suitable and spare accommodation. Cross alleyways e.g. fore and aft the engine room casing are other suitable sites.

Space is often obtainable under companions, but this latter position is inadvisable first because it is in the ward, and secondly because people going up and down the companion are apt to foul the tables with dust etc

Mess tables should not be fixtures, but fix into the deck by sockets so that they can be cleared when not actually in use.

It is an advantage to group Mess Tables together instead of each ~~table~~ ward having its own.

For the reasons mentioned above "Space C" in the lower deck has been left blank and would suit admirably as a Messing Room, and as a recreation room for patients. It would be provided with scuttles like its adjacent ward on the same level in "Space b."

Here also would be provided sufficient cupboard space or Mess Store, and a Ward Store for Ward B above it. It would be impossible to have a pantry at this level, but a food lift would work to the cook houses on the forward well deck, and the pantry could be placed as close as possible in the alleyway at the

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP⁵18. Mess Table Accommodation. (cont.)

side of the boiler casing.

Food lifts for a Mess Room so placed would almost be a necessity as the carrying by hand of all dishes down the steep ladders would be a matter of no little difficulty.

19. Pantries.

Pantries are not an adjunct necessary to every ward.

Every Mess Table or group of Mess Tables should have a pantry associated.

The fitting-out of the pantry calls for no special description.

It is usual to fit the doors of such rooms with glass upper panels, As may be imagined such glass is frequently broken. Drawn wire makes a more efficient and durable panel. Latrines alone might be allowed obscured glass, but the glass if in small panes instead of in large panels is less likely to break when the ship is rolling or pitching.

X~~II~~ 20 Quarters for Establishment.

The quarters for the hospital establishment may be divided into three classes.

- | | | | | | | | | | |
|----|----------|-----|-------|----------|----|------------|---------------|---|---------------|
| | | | | | | | | | Accommodation |
| a. | Quarters | for | those | entitled | to | 1st. Class | Accommodation | | |
| b. | " | " | " | " | " | 2nd | " | " | |
| c. | " | " | " | " | " | 3rd | " | " | |

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.20. Quarters for Establishment.

The attendance and messing of 1st and 2nd saloon passengers devolves on the ship so no amplification is necessary.

The fitting of quarters in the hospital decks for N.C.O's, and men in British ships and for orderlies and followers in Indian ships is a more difficult matter.

Space is usually available in "Space a." on the main deck. Second saloon ~~space~~ cabin accommodation will generally prove more than adequate for ordinary requirements so extra quarters may be provided in this locality by the dismantling of cabins.

There is a tendency always to make these quarters into a series of small cubicles. This practice hinders ventilation, occupies more space, and is much more difficult to keep clean than if bigger open rooms are made. Take "space a" on the main deck in diagram 3. Two small compartments might be allowed for N.C.O's, but I can see no reason why the space should be further subdivided were the ship carrying British personnel only. If however Indians have to be carried two extra partitions would be necessary to divide the inhabitants of the large compartment into orderlies, followers and sweepers.

It should be possible to cut off the Quarters from the hospital by doors that will lock, to prevent the men making a "right of way" through the hospital wards when the ship is empty.

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.20. Quarters for Establishment.

Special latrines and wash houses for these quarters may be located on the well deck above.

21. Deck space for Ambulatory Cases.

Deck space should be reserved for 1st and 2nd saloon, and for the crew. All other deck space will be allowed to the sick. This is specially mentioned to bring to notice a fact often overlooked. Ordinarily the access from one deck of a ship to another is by means of a ladder too steep to be negotiated by a stretcher, and often too steep for an invalid.

Every upper deck should have one ladder replaced by a gently sloped ramp, up which a stretcher may be carried with ease, and which will not be a serious obstacle to a man on crutches.

Deck shelters should be built in suitable places.

22. Mortuary.

The Mortuary will be a deck structure on the after part of the ship and generally on the poop.

23. Laundry and Soiled Linen Store.

The laundry should if possible be aft.

It will consist of three rooms viz. Washing house, Drying room, and Soiled Linen Room.

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.23. Laundry and Soiled Linen Store. (cont.)

The soiled linen room should have a cemented floor sloped to the scuppers, and have smooth non-absorbent walls preferably tiled, so that when empty it can be thoroughly cleaned and washed out with a hose.

It should also be well ventilated.

It must be large enough to hold all the soiled linen of the ship at one time, as at the end of each voyage the soiled linen will all arrive at once.

If available space can be found on the main deck for both the Dispensary and the Operating Theatre, the forward well deck would be free enough to carry a temporary structure consisting of the Laundry Rooms, and the bathrooms for the Establishment.

24. Tailors' Room.

A small room for one or two tailors to work in has to be fitted in.

Its position is not important. In Diagram 3. space has been allowed amidships.

N.B. The possibility of fitting the Dispensary into one of these broad alleyways amidships should not be lost sight of. The space shown in the diagram between the boiler and engine room casings should in all circumstances be preserved as this is the hottest part of the ship; the open alleyway permits of a free current of air, very advantageous in hot weather.

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.25. Guard Room.

The Guard Room should be in a central part of the ship if possible.

It will contain a safe for the storage of valuables and an arm-rack for rifles.

The alleyway amidships on the main deck, part of "Space c" in the lower deck, and the after end of the starboard side of Ward E are all possible locations.

26. Disinfector.

A high pressure steam disinfector is a necessity on every Hospital Ship.

These are generally placed on the boat deck, or the top of the poop⁵.

The type in common use is Mc. Whirters which will disinfect the kits of about 20 men in an hour or 240 in 12 hours. The kits of 400 men then would take about two days to disinfect with one disinfector.

There should be a sufficiency of disinfectors^a to complete the disinfection of all kits within 12 hours of their arrival on board. If it is not possible to complete the disinfection of the patients kits in this time, it means that kits have to be left lying about over night, and so are apt to get lost or pilfered.

Disinfectors if on an open deck should be provided with a head covering as it may entail an orderly

ESSENTIAL REQUIREMENTS OF A HOSPITAL SHIP.26. Disinfector. (cont.)

standing for two days exposed to the sun in the Persian Gulf, or Red Sea to work it.

27. Duty Room.

A Duty Room should be fitted in a central place in the Hospital in the main, or the upper deck.

~~XXXXXX~~~~XXXXXX~~IV. THE "SERVICES" OF A HOSPITAL SHIP.

To complete the brief notes or rather "tips" on the fitting out of a Hospital Ship there only remains the various "services" to be considered, which are

Water supply.

Heating.

Lighting.

Ventilation.

Telephones.

1. Water Supply.

The water supply will consist of three separate systems viz. Salt Water; Fresh Water; Hot Water or Steam.

The Salt Water will be led in pipes by forced circulation to every bath and latrine on the ship.

Wherever possible salt water is used instead of fresh water to economize to the utmost the latter which has to be jealously guarded.

IV. THE "SERVICES" OF A HOSPITAL SHIP.

1. Water Supply.

The salt water supply is led off the system already present on every ship for fire hoses.

Fresh Water Supply.

The fresh water on a ship is carried in tanks in the bottom of the hold, whence it is pumped to a cistern on the top deck. The water therefore is limited in amount, and is bought in ports at a certain price per ton, (224 gallons.)

It is usually more economical for a ship to buy its water than to rely on its condensers.

The fresh water has to be led to every ward, to every drinking fountain, to Medical Officers' wash basins, operating theatre, side rooms, dispensary, washing places laboratory, pantries, and to the laundry.

To prevent waste all fresh water taps should be of the "push" pattern. If fresh water taps are led to baths the taps should be locked, and only opened for the exceptional cases which require fresh water baths.

The laundry will be found to be the cause of the greatest expenditure of fresh water. In spite of every precaution it will be found, that it is not safe to reckon on less than an average of one ton of fresh water for every twenty people per day with the laundry in full swing. This works out at an average of just over 11 gallons per head as a minimum standard, and certainly seems needlessly extravagant as salt water is used for many purposes that ashore would entail the use of fresh water.



IV. THE "SERVICES" OF A HOSPITAL SHIP.Hot water service.

The fitting of a hot water service in a ship presents several difficult problems.

The easiest method of supplying hot water is by the use of steam. Either the steam passes directly into the water, or heats a coil in a water receptacle.

The heating of the wards is also done by steam pipes and radiators.

The objection to this method is that to obtain hot water, say in a forward ward, every steam pipe between that point and the engine room is heated up. In cold weather this would be no objection, but hot steam pipes in a ward in August in the Red Sea are a very serious objection. I have had personal experience of a ship where the steam pipes were led along what was the roof of the hospital wards. These pipes as it happened passed through two wards, and directly over a row of cots which were of the double tier variety. The occupants of these cots were within about 3 feet of the hot pipes. Though the pipes were served with some non conducting material the heat that came off them made about 18 cots quite uninhabitable in hot weather and heated up the whole wards to an unnecessary extent.

There is another point to be considered.

The laundry is sometimes situated forward in the foc'sle., and it requires hot water when in use. It is usual to take the steam for the heat from the ship's steam pipes at the nearest point forward. As a consequence, whenever the laundry has to work, the

IV. THE "SERVICES" OF A HOSPITAL SHIP.

Hot Water Service. (cont.)

whole forward deck service of steam has to be maintained at pressure, which in a case I know of was estimated to cost 3 to 5 tons of coal per day.

How may these difficulties be avoided ?

From enquiry I was able to make at the time, it was ascertained that it would be an actual economy to fit a special service of 1" or 2" asbestos covered pipes for the hospital service of hot water, whilst the heating system could be taken without objection from the ship's steam pipes already present.

The system should be supplied with a series of valves after its emergence from the engine room casing so as to be controllable by the Medical Staff.

If possible, the pipes should be led along an upper deck, and its branches be led vertically down as required into the wards.

In the planning of wards effort should be directed to reducing to a minimum the necessity for leading pipes transversely across a ward.

Heating A usual and efficient method of heating wards is by hot water radiators.

The valves for the control of this heating system should be placed as far back, i.e. as centrally, as possible to avoid the unnecessary heating up of steam pipes when the radiators ~~when~~ are not required.

IV. THE "SERVICES" OF A HOSPITAL SHIP.

Lighting.

The electric installation on a Hospital Ship will be used for blowers, fans, sterilizers, radiators, electric irons for the laundry, and possibly for the lifts as well as for the lighting, so the estimate of power required must take these things into account.

The following suggestions may prove useful ;-

- a. That each ward have a control switch by which all lights may be extinguished except permanent lights which burn all night.
- b. That hand inspection lamps be supplied for each ward, which should be fitted with adaptors for use on electric light sockets, rather than with terminals which fit special wall plugs.
- c. That all electric sterilizers supplied be "fool-proof."

Ventilation.

There are two schools of opinion as to the best method of ventilating a ship.

One school advocates the bringing in of fresh air, while the other declares that by exhausting the foul air, the fresh air will always find its way in.

As a rule the ventilation of a ship presents little difficulty, as with a beam or head wind trimmed windsails, and wind-scoops will give a good draught, whilst open hatches and ventilators will give good

IV. THE "SERVICES" OF A HOSPITAL SHIP.Ventilation. (cont.)

egress to foul air.

There are occasions, such as the voyage south in the Red Sea in the hot weather and also in the Persian Gulf when in a following wind, the wind-sails flap idly from the rigging, and one has to resort to some mechanical device.

The possibilities are

1. Electric or steam blowers which force in fresh air
2. Electric or steam exhausts.
3. Electric fans.
4. Any combination of these.

During 16 voyages through the Red Sea between December 1914 and September 1915. many experiments were made on the ship I was on in ventilation of the wards in the methods above mentioned, and we came to the following conclusions.

- a. For ventilation fans are useless, but do give some feeling of comfort to those within their range of effectiveness.
- b. The girders across the roofs of the wards divided the upper layer of air into so many dead air spaces, thus rendering the question of withdrawal of air very difficult and unsatisfactory.
- c. Blowers gave a better general result, and created that sense of moving air so pleasant in stagnant tropical heat.
- d. The combination of blowers and exhausts was

IV. THE "SERVICES" OF A HOSPITAL SHIP.

Ventilation. (cont.)

necessary in specially hot spots near the engine room casing.

e. Portable fans fitted with leads, and adaptors could be fitted to lights, and used for special cases.

f. No amount of mechanical aid was comparable to turning the ship round head-on to wind for a short time, and so getting a sweep of fresh air through the ship.

The immediate effect of this proceeding in removing the heat oppression has only to be experienced to be realized.

Telephones.

A telephone system through the ship is an invaluable aid in administration, and to Medical Officers and Nurses often a great saving of time and energy.

Soda Factory.

A soda factory on board would be an inexpensive item and an economy worthy of consideration if space for its erection and personnel for its working were available.

THE "FITTING OUT" AND EQUIPPING OF HOSPITAL SHIPS.

In Part II the system adopted in Part I has been continued viz. descriptions have been given in detail only where these concern departure from the standard pattern of Hospital Ship as turned out by the Admiralty.

To commence with, the general system of planning a Hospital Ship had to be given to make the subsequent text intelligible to anyone unacquainted with ships.

All measurements have been purposely omitted, as also have been detailed descriptions of fittings with which, in the standard pattern, I have no fault to find.

As the selection and fitting out of the Hospital Ship have now been dealt with, Part III will deal with the method of administration of the complete ship.

MILITARY HOSPITAL SHIPS.

PART III.

The Organization and Administration of Hospital Ships.

For the successful administration of Hospital Ships a definite system should be adopted which has stood the test of time and experience.

This system so far as possible should be set down in printed rules, or "Standing Orders" so that such success as has been achieved may be carried on, no matter what changes may occur in the Staff of the hospital.

The laying down of a system of sound administration is not to be confused with "red tape" which of course is unsound administration.

It will be necessary to introduce certain forms that should be adopted, and records which have to be maintained.

The very word 'form' probably in most people will produce a smile of derision, so before going further I wish to make clear that in all cases the use of a form is, or should be, to diminish labour and not to increase it.

The adoption of a set of forms, as I shall endeavour to show below, is to ^{reduce} ~~minimize~~ clerical labour to the smallest possible extent.

Only the forms and returns necessary for the administration of the ship will be dealt with.

Incidentally I may mention that a very great amount of the enormous number of returns that had to be

The Organization and Administration of Hospital
Ships

furnished by Administrative Medical Officers during the war was in no way due to meddlesome administration but to the inquisitive public, for whom all sorts of details of sick and wounded had to be supplied, which involved the collection of this information-probably unnecessary- from every Force and Division scattered through the world.

The Organization of Hospital Ships.

Before discussing the administration of Hospital Ships in particular, the larger view of Administration has to be considered viz. the organization of Hospital Ships as a whole.

At the beginning of the War there was a sad lack of organization of the Hospital Ships units. Many ships, if not all, were individual units under no definite authority, and therefore in many respects handicapped for ready means of supply of personnel, stores etc.

Their organization was improved as years went on, but never, I make bold to say, perfected.

During the recent war Hospital Ships developed in numbers from a fleet of no small numbers to an immense number of craft of all sizes varying from the largest of Cunard Liners to tiny river steamers, and which were spread over all the oceans and on many rivers.

As all Hospital Ships are in the complete sense of the word mobile as units they are auto-mobile, and

The Organization of Hospital Ships. (cont.)

therefore easily transferable from any one part of any ocean to any part of any other, they should all be under one supreme command.

River boats and such small craft would be considered local ships, and used only for the local work for which they were constructed. With the ultimate supreme control of all Hospital Ships in one place, emergencies in any one locality could be dealt with most effectively. This Director of Hospital Ships might have some such title and rank as D.D.M.S. Hospital Ships, and he should have a Naval Adviser for purely nautical matters.

Beneath the supreme control ^{all} ~~the remaining~~ areas requiring Hospital Ships could be divided into zones each an administrative unit which would correspond to an A.D.M.S. command.

Each zone would have a definite Base, and this Base would be Head Quarters for every ship working that zone.

For example in the recent war the Head Quarters for all Hospital Ship Zones would be either in London or in Southampton.

The Zones would be

1. Ships working between France and England based on Southampton.
2. Ships working Egypt, Dardanelles, and Salonica based on Alexandria.
3. Ships working Mesopotamia, East Africa, and Suez based on Bombay.

The Organization of Hospital Ships. (cont.)

Ships working other minor fronts such as the Cameroons and Australian and New Zealand ships could be provided for as most convenient.

Again certain Zones might prove too big to be handled by one command, and would be divided. On the other hand the wounded from, say Salonica, might be catered for by ships from Zone 1. as well as from Zone 2. as necessity demanded.

By the grouping of ships in this way into definite commands personnel could be transferred as necessary from one ship to another; stores, reserves of personnel etc, would always be available at their base to effect replacements.

The A.D.M.S. of each Zone would be responsible not only for the actual Hospital Ships in his Zone, but also for the Medical embarkation and disembarkation and their Staffs throughout that Zone.

The chief objection to this procedure would ~~px~~ probably come from the Military Administrative Staffs at the Ports of Embarkation, who might complain that difficulties arose through the Embarkation Medical Officer not being under their command.

Though this might be the case, I think that the advantage gained in efficiency on the one hand should overbalance any possible loss of harmony on the other.

Provided that Embarkation Medical Officers were under the A.D.M.S. Zone the latter could tour his Ports of Embarkation as required, and from experience of all

The Organization of Hospital Ships. (cont.)

appreciate difficulties, advise, and help.

THE ADMINISTRATION OF A HOSPITAL SHIP.

The administration of a Hospital Ship has ~~not~~ necessity to differ from that of an ambulance or a shore hospital owing to the different type of work it has to perform.

The work on a Hospital Ship runs in definite cycles and the length of each cycle depends on the length of each voyage.

An empty Hospital Ship lying alongside a wharf may in the space of 2 to 3 hours be filled with sick, and steaming to sea. At the end of the voyage the inverse process of disembarkation has to be dealt with, with equal expedition.

Arrangements have to be such that the complicated processes of embarkation and disembarkation proceed smoothly and quickly, and that after embarkation this large and sudden influx of patients can be treated, tended, and fed without undue delay or confusion.

A plan of administration will be given that was found to lead to economy, facility, and avoidance of friction

It will be assumed that the vessel is fitted out on the lines sketched out on the previous pages, and that she accommodates about 350 cases, which number is a very suitable "one unit standard" for Hospital Ships.

THE ADMINISTRATION OF A HOSPITAL SHIP.Staff and Establishment.

The Staff and Establishment of a Hospital Ship will vary according to its type, and location of employment.

Once again I wish to emphasize that no ship should be rigidly confined to one sphere of action, or to the carrying of one race only. As has been shown during the war, Hospital Ships fitted for Indian Troops sooner or later carried either British Troops alone or mixed British and Indian Troops as occasion demanded, and with complete success.

Earlier it has been shown how the fittings of an Indian ship may be readily adaptable to accommodate British sick; now it will be shown how only minor changes in the Staff can suffice.

Incidentally ^{at} it may be recorded here that on occasion Hospital Ships with purely Indian Establishments have without alteration taken a ship-load of British sick long voyages with the happiest results.

Below is a table giving the requirements for Establishment for a Hospital Ship of 350 beds when carrying Indian sick, and British sick, in home waters and in eastern seas.

Any combination of these establishments may be adopted to suit individual cases such as "mixed ships".

THE ADMINISTRATION OF A HOSPITAL SHIP.Staff and Establishment. (cont.)A Hospital Ship of 350 beds.Establishment.

	British Troops		Indian Troops
	a.	b.	
	In home waters	In eastern seas.	
Med. Officers	6	6	6
Nurses	6	6	6 (Indian trained)
<u>R.A.M.C.</u>			
Warrant Officer	1	Assist. Surgeons 7	Sub Asst.
Nursing Orderlies	16	Nursing Ordy. 16	Surgeons 8
Dispenser	1		Ward Orderlies 12.
		Army Hosp. Corps ?	12 ?
Cooks	As required.	As required.	As required.
Bakers	"	"	"
<u>Quartermaster's Branch.</u>			
N.C.O.	2	S. & T. N.C.O. 2	2.
Privates	4	Assistants 4	4.
Tailors	2	2	2.
Laundrymen	2	2	2,
<hr/>			
Topazes	?	16 ?	16.
Guard N.C.O.	2	2	2.
Privates	8	8	8.
Clerks	2	2	2.
<hr/>			

THE ADMINISTRATION OF A HOSPITAL SHIP.Staff and Establishment. (cont.)

It is not possible to lay down any more definite scale of establishment, as the numbers required will depend to a great extent on the type of ship, its number of wards, facility for administration etc, but the above may serve as a guide.

The number of Cooks and Bakers required will depend in part on the number of galleys built, and in part on the source of supply of the diets. In certain cases, by ~~spe~~ special arrangement all diets have been provided by the ship's company.

In the table it will be noticed that "Topazes" have been introduced into the establishments. These are Goanese who are trained to shipboard life and ways, and are employed entirely in the east as stewards and for cleaning, and for lavatory work.

This class of man should always be enlisted for Hospital Ships in the east, as they already know their work, and are general 'handy men' besides having an idea of cleanliness undreamed of by the Indian engaged on the same kind of work.

In the table it may be noted that question marks have been put after "Army Hospital Corps" and after Goanese "Topazes" as the latter could do all the duties required of the former.

The Staff will be allotted duties as follows

THE ADMINISTRATION OF A HOSPITAL SHIP.Staff and Establishment.a. Officers.

For a Hospital Ship of 350 beds there should be not less than 6 M.O's. This number may at first seem excessive, but as has been pointed out above there are regularly recurring periods of strain when a ship suddenly fills. At this time every patient has to be dieted, clothed, nursed, and treated immediately. Of each particulars have to be taken for record. Frequently all have to be bathed, and have their kits disinfected, whilst some may require operation.

Of necessity treatment on a Hospital Ship is not the only factor to be considered. A Military Hospital Ship is really to be regarded more as a method of transport of sick and wounded than as a hospital for curing.

On voyages lasting 3 or 4 days or even 3 or 4 weeks only operations which are of an urgent nature may be performed, as with all the disadvantages of shipboard life operations which can be avoided should be avoided.

Treatment then, to a considerable extent, has to be of a modified nature.

The motto of the Medical Officer in war time should be "Evacuate". From the front line aid-post to the convalescent home behind the Base the stream should be kept flowing in a regular current.

In this stream many a chronic case of Debility, Piles, Chronic Bronchitis etc. will arrive at their penultimate stage on a Hospital Ship.

THE ADMINISTRATION OF A HOSPITAL SHIP.Staff and Establishment.a. Officers. (cont.)

As is only natural the more serious and acute cases will receive most attention, but in a Hospital Ship the Staff should be sufficient to cope with, and treat the chronic invalids as well as the acutely sick and wounded.

As has been seen our Hospital Ship consists of five large wards and several small wards.

Wards A. B. and C. will contain the most serious cases, and can be tended by two Medical Officers.

In wards D. and E. the cases being less serious will require less individual attention, but by reason of their large numbers will require an Medical Officer to each.

The general administration of the ship absorbs the time of more than one person, so it has been the custom in every ship I know of, of this standard size to have an Officer Commanding and an Adjutant.

The Adjutant may also take over a small amount of ward work e.g, the Officers' Wards and Small Wards, but this usually is not feasible as the times he is most busy with administrative work, viz. during and immediately after embarkation; during disembarkation and immediately before, are the very times he is also most required for his ward duties.

On the other hand the clinical duties which can most suitably be performed by an Adjutant are anaesthetics X Rays, and Laboratory.

THE ADMINISTRATION OF A HOSPITAL SHIP.Staff and Establishment.

The Staff will be allotted duties as follows

Medical Officers

The Officer Commanding and the Adjutant are Administrative Officers. The Adjutant will in addition be in charge of the ~~Ward~~ Laboratory, X Rays, and will give anaesthetics. He may also be in medical charge of the Establishment and the crew.

Four Medical Officers will be in charge of the Wards.

Warrant Officers.

The Senior Warrant Officer's duties will be of an administrative character. Also he will be in charge of the Medical Stores.

A Dispenser or Sub Assistant Surgeon or Assistant Surgeon will be in charge of the Dispensary and Operating Theatre.

The remaining Assistant Surgeons or Sub Assistant Surgeons will be detailed to wards.

Nursing Sisters.

The senior Nursing Sister will be detailed to the Officers' Ward, and the others distributed as required.

Nursing Orderlies.

A sufficiency of Nursing Orderlies has to be allowed to permit of the performance of day duty and of night duty in the wards; staffs have to be found for the small wards, the operating theatre, and infectious wards distinct from those for the large wards.

~~Quartermaster~~

THE ADMINISTRATION OF A HOSPITAL SHIP.Staff and Establishment.(cont.)Quarter Master's Establishment.

This administrative branch will be under a Warrant Officer or Senior N.C.O., and he should have at least 3 Assistants. He may be R.A.S.C. or Ordinance or R.A.M.C. His assistants may be Indians if the ship is in eastern waters.

This branch takes charge of all rations, clothing, and equipment other than what is medical.

The ship should supply him with a reasonable working quantity of Admiralty Stores in bulk (blankets linen mattresses etc.) and the Warrant Officer in charge will be responsible for their issue and distribution to wards.

This branch will control the Tailor's shop and the laundry.

Adjutant's Establishment.

Indian ships were supplied with Pack Store Havildars at about the ratio of 1 to 100 beds.

It was found that there was not employment for men purely as Pack Store Havildars, but that there was a very real necessity for thoroughly trustworthy men to assist in the administration. Two good men should be sufficient for a ship of the size here outlined. One would be in charge of all the pack stores or Invalids' Effects Rooms, and of the Disinfecting, and the other would be in charge of the galleys and the messing arrangements.

THE ADMINISTRATION OF A HOSPITAL SHIP.Staff and Establishment. (cont.)Adjutant's Establishment. (cont.)

Each of these Havildars or N.C.O's. would be responsible for the discipline of half of the Establishment.

Guard.

It is usual to supply a guard to Hospital Ships. This guard, though more useful in port than at sea, is always of great utility provided its duties are not restricted entirely to the doing of guards.

To be of any use it must consist of 2 N.C.O's. and 8 men at the smallest.

The duties of washermen, cooks, tailors etc. are too obvious to need discussion.

STORES.

On taking over a Hospital Ship one of the first necessities is to arrange and sort all the stores.

All stores can be classified under 4 headings

- Drugs.
- a. Dressings, and Medical and Surgical Appliances.
 - b. Admiralty and Owner's gear and Equipment.
 - c. Rations, clothing, utensils etc.
 - d. Medical Comforts, gifts etc.

If the plan of arranging store rooms suggested in P

THE ADMINISTRATION OF A HOSPITAL SHIP⁵Stores.

Part II has been adhered to great simplicity in sorting, checking, and in distribution will be effected.

All Class a. stores go down Hatch No. 2.

" " b. " " " " " 1.

" " c. " " " " " 4.

" " d. " " " " " 5.

All stores should be divided into two different classes viz. expendable stores, and non expendable stores

A ledger should be made up of every separate article in each store, and from this ledger a typed list will be made, and kept in the store so that reference may be made to it by Officers, and so they may know what articles are available.

The ledger will show in separate columns receipts, issues, and balance for each item.

Issues of stores.

As early as possible after checking is completed issues of working quantities will be made to each ward, to the Dispensary, to the operating theatre etc.

It is of non-expendable stores that a keen reckoning has to be kept, so, for such, separate issue books should be kept. Preferably issue books for expendable and non-expendable stores should be of different colours.

Issue books should have alternate leaves perforated for tearing out, and by means of carbon paper, a copy of the issue made goes to the indenting Officer.

Similar receipt books have to be kept.

THE ADMINISTRATION OF A HOSPITAL SHIP.Stores.Issues of stores. (cont.)

If articles on an issue voucher are returned to store intact the voucher may be signed as cancelled, but if returned only in part then a separate receipt voucher has to be made out.

When once the first checking and cataloguing has been done and first issues made, the daily work of store-keeping should be quite inconsiderable, in all stores except the ration store.

Medical Stores.

As has been seen, Flat No. W 2. has store rooms for Drugs, Dressings, and Medical Equipment. There is a store for bales of dressings, and an issue room for storing lesser quantities.

These stores are taken over by the Senior Medical Warrant Officer, who checks all into his bulk store room, and then arranges individual articles each into its proper place.

Each ward has its own store room and therefore wards should be encouraged to maintain ample stocks which would only require occasional replenishing.

Admiralty and Owner's stores.

These stores will be consigned to the Commander of the ship, and will be taken over, checked, and listed by one of the Ship's Officers.

All go into No. 1. Flat.

THE ADMINISTRATION OF A HOSPITAL SHIP.Stores.Admiralty and Owner's stores. (cont.)

The practice in the P. & O. was to supply the Hospital Ship with a special Officer called a Troop Officer whose duty it was inter alia to take charge of these stores.

The stores consist of blankets, linen, mattresses, pillows, sheets, towels, cutlery, plates, mugs etc, and also cleaning gear and life belts.

These articles should be issued in bulk to the Quarter Master's department, who in his turn will ~~issue~~ ~~issue~~ issue requirements to the wards and messes.

The Government supply of all these articles is adequate to meet all emergencies, so only the reserves of these stores will be held by the Troop Officer; the working quantities being accounted for by the Quarter Master's branch.

Quarter Master's Stores.

The Quarter Master's Stores will consist of

- a. Rations.
- b. Clothing.
- c. Issue bedding. (q.v.)
- d. Cook house supplies and utensils.
- e. Cutlery etc. for issue from the Ship's stores.
- f. Supplies for Tailor and Laundry.

Store rooms for the Quarter Master have been arranged in No. 4 Flat, and thither all his stores will eventually arrive.

THE ADMINISTRATION OF A HOSPITAL SHIP.Stores.Quarter Master's Stores.(cont.)

The Quarter Master's Stores are issued on a system similar to that sketched out above for the issue of stores.

Rations as a rule will be issued daily.

Medical Comforts are usually kept by the Ship's Purser and issued by him on demand.

On taking over charge of a fully equipped Hospital Ship from another Officer it is essential that all the stores be checked. For this reason alone it is of inestimable value to both the "handing over Officer" and to the "taking over Officer" that all store room lists be kept with meticulous accuracy.

Administrative Method.

We now have our ship completely fitted, equipped, and staffed. All stores have been unpacked, checked, and sorted, and are available for issue.

Instead of giving inconsequent details of administrative methods for the work on board a Hospital Ship, a summary will be given of a trip of 7 to 10 days duration in the course of which the main administrative difficulties will be dealt with.

The complete method of administration should be laid down definitely by each ship in its Standing Orders

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.

which should be a printed handbook a copy of which should be in the possession of each Medical Officer and Warrant Officer.

Appendix I. gives a specimen of such Standing Orders. Amplification, and ^lexp_Aanation of the main points of these Standing Orders will be given in the subsequent notes

a. Preparation to receive Sick.

Due warning will certainly be given of the arrival of the sick and wounded.

As soon as the checking of stores is completed, each ward will indent on the proper store for a necessary supply of the various things it requires for the voyage.

The dispensary will be fitted out, and the Operating Theatre will be prepared to start work, even to the sterilization of drums of dressings.

Each ward has its own store room and Invalids' Effects Room at hand, and as long as the ship is empty the bedding for each bed will be kept in the Invalids' Effects Room.

Reserve bedding and other ward stores will be kept in the ward store room.

A ship in port is often infested by all sorts of persons who doubtless have their uses, but justly or unjustly are blamed for the disappearance of articles from the wards. To prevent theft, and also because of

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Preparation to receive Sick.(cont.)

the general griminess of ports,(greatly increased by coaling operations) it is necessary as soon as the last sick man leaves the ship to strip the wards, and lock everything away. As the Invalids' Effects Rooms are empty of kit they form an ideal store for the stowing of the ward bedding.

When the arrival of sick becomes imminent the wards will be warned, and each will take its bedding from its Invalids' Effects Room, beds will be "made", dressings prepared, and stock bottles filled with their mixtures or lotions. For each cot will be laid out its set of hospital clothing

The C.O. of the ship will issue his daily orders regulating turns of duty etc. and other administrative orders which are called Part I Orders, and Part II Orders are of a kind which affect, or may affect, the pay of any one of the Establishment e.g. Orders giving promotions, appointments, punishments involving loss of pay. This division of orders is a purely military custom consequent on the necessity for sending Part II Orders to the office which deals with the accounts of the man or men concerned.

Part I Orders then will give due warning to all on board of the arrival of the sick, and will give a definite time and date on which wards will be ready.

The C.O. should inspect all wards before the arrival of the sick.

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Preparation to receive Sick.(cont.)

Eventually definite orders will be given of the hour of arrival of the sick. This information will be passed round the ship, so now we will consider the question of

The Embarkation of the Sick.

The method of embarkation of sick differs in almost every port in various details.

Embarkation may also occur at sea.

In the first place the embarkation at a port will be considered, and to present every difficulty, we will assume that it has to be done at night, and that no assistance is available from shore stretcher parties or baggage fatigues. (Were the general scheme of Administration for the Hospital Ship Fleet in existence the A.D.M.S. of the Zone concerned would arrange that every E.M.O. (Embarkation Medical Officer) had men available and trained for loading Hospital Ships.)

If we have been wise certain difficulties will have been foreseen, and the men will have been taught and trained in their various duties.

The Chief Officer of the ship will have been approached and informed of the necessity for gangway lights, electric light clusters over the hatches, and especially over the lifts. Perhaps awnings have to be stripped.

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.The Embarkation of Sick.(cont.)

Every available man, whether he be cook, tailor, topaz or orderly will be pressed into service, and given definite duties. The stronger men will be detailed as stretcher bearers, and the others as kit carriers.

Every man's kit must come on board with its owner, so men have to carry kits for those unable to carry their own.

Certain men will be detailed in lift duty and practised in the working of these.

Most cot cases will be carried to the lifts by one set of stretcher bearers, and from the bottom of the lifts to the cots by others.

At times the use of gangway ports can reduce to a minimum the work required of the lifts, and so accelerates greatly the loading or unloading of sick.

Facing the bottom of every companion or ladder, in every alleyway, and at the entrance to every ward should be very visible directing signs showing the direction of cots by their numbers.

As every ship requires its own management to suit its construction, it must be left to the ingenuity of the individuals concerned to devise what is actually the best method of handling the sick, and getting them aboard most expeditiously.

Presumably two gangways are being used for patients embarking; one forward and one aft. A third gangway is

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.The Embarkation of Sick.(cont.)

for the returning stretcher bearers only, saves much time and relieves congestion.

The Adjutant with one or two assistants takes up a position on the wharf midway between the two gangways, and all patients file up to the table at which he sits

He has a printed plan of the wards, similar to a Theatre Plan, and he allots a cot to each patient as he files past. Vide Appendix 2.

Each patient bears a label, or card enclosed in a transparent envelope pinned to him, and from this an assistant calls out the information required for the allotment of a cot as the patient approaches the table.

Another assistant has packets of labels, each packet consisting of numbered labels corresponding to the cot numbers in each ward.

N.B. The numbers on the labels should be large and distinct.

The Adjutant calls the cot number allotted and the assistant pins the corresponding label to the patient and directs him to his gangway.

The Adjutant crosses off the cot allotted from his plan, and in so doing can write across it such information as may be required or useful e.g. Diet required, or in the case of Indian Troops Mohammedan or Hindu.

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.The Embarkation of Sick.(cont.)

It takes long to explain, but in practice is quick, and efficient.

The patient accompanied by his kit is directed to his gangway at the top of which is posted a man to see that no one embarks without being allotted a cot, and to direct him to his ward on arrival on the ship.

In this way all are embarked, and the method has many advantages, the chief of which are

1. Labels pinned to a man are easy to see at a distance.
2. The labels are easily made, and are easily replaced in case of loss.
3. Any one of the staff can see by a man's label if he is in the wrong ward, and can direct him.
4. The Theatre Plan system gives an opportunity for grouping patients, and also lends itself to infinite possibility for speedy tabulation.

Personally I found it most useful in the case of Indian Troops for marking diets. In crossing out a cot, I would mark it if a Hindu on No. 2. Diet " H. 2. " If a Mohammedan on No. 1. Diet " M. 1. " As soon as the last man had embarked I could give the Havildar in charge of the cook houses accurate information of the numbers and kinds of diets to be got ready.

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Embarkation of Sick at Sea.

Embarkation at sea is necessary in such places as the Persian Gulf Ports, or may be simulated at such places as Port Said where the wharf is so low that gangways cannot be used

Here again a gangway port may be utilized to great advantage, and obviate the necessity for using the ship's cranes for hoisting the patients inboard.

If however cranes are necessary then the cot cases will be taken up from the lighter or wharf alongside, and as the crane will plumb the hatch will lower the patient directly into the ward, without the intervention of lifts.

The cot cases on stretchers are hoisted either in a wooden box, or in a canvas case round a wooden frame

Walking cases can generally climb the ship's ladder. At all times when cranes may have to be used due warning should be given to the Chief Officer of the ship that he may have the cranes ready and the awnings stripped.

In all other respects the routine of embarkation at sea and in port are similar.

As the staff of a Hospital ship usually is only just sufficient to carry out the ordinary duties, it should be made a rule that special personnel be provided if insanes have to be carried.

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.

The safeguarding of insanes on board a ship is no light matter, and to be effectual with the ordinary staff might cause serious inconvenience to all the other patients.

It occasionally happens that the embarkation authorities require a complete nominal roll of those embarked before the ship leaves the port. If this is required it will be most quickly compiled by having clerks at the foot of each gangway to take the patient's names as they come aboard. If however nominal rolls have arrived with the sick, these need only be checked as the men file past. Further useful information is attainable by marking each man's cot number on the nominal roll as it is checked.

Some confusion and delay there is bound to be, but if the system as above detailed be carried out, and the personnel are drilled in their duties it will be found that the embarkation proceeds in a steady stream - cot cases go to cot case wards, and walking cases to their wards, officers, infectious cases, venereals, and insanes each finding his way direct to his allotted cot-- and, as soon as the last case has gone aboard complete data of every patient embarked is available.

Ward Medical Officers must inform the Adjutant of the change of any patient from one cot to another.

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Routine Duties with Sick on board.

The broad routine of duty as laid down by the C.O. in Standing Orders will be adhered to, and only detail will be published in Daily Orders e.g, Staffs for Orderly Duty, Night Duty etc,

Now let us follow the patients to the wards to see the procedure there.

The patient if a cot case arrives in the ward in a lift, and is carried to the cot ^{whose number} which his label bears.

If a walking case, he is directed to his cot on entering the ward.

All patients must be warned not to leave the ward till given permission by the M.O. to do so.

Each patient will be given a mug of hot soup, or milk and a biscuit on entering the ward.

The routine then to be followed by the wards will depend greatly on the circumstances.

If the patients have come from a Base Hospital, and are clean, there should be no immediate necessity for a bath for each one. In such cases the first necessity is usually for the particulars of each man. If this is required before the departure of the ship, then the M.O's. first duty will be to fill up a card for each of his patients giving Number, Rank, Name. Unit (permanent and attached.) Disease, Cot Number. Class of Invalid, and Diet required.

A specimen card is shown in appendix 3.

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Routine Duties with Sick on Board.

If however this is not required before the ship leaves the port, a sufficiently accurate estimate of the diets required for the first 24 hours may be got from the embarkation "Theatre Plan" .

If, as at Gallipoli, the patients are unwashed and lousy, only cot cases will be put to bed, others will strip off their clothes, and open out their kits. Each patient will make up a bundle of the sterilizable articles of his kit, and to this the cot numbered label will be attached. The patient then goes and has his bath, and on coming out will be given a clean set of hospital clothing.

The bundles for sterilization will be placed beside each bed ready to be taken off. The man in charge of the sterilizing will remove from the ward two loads of the disinfector at one time, and each load will be returned to the ward when its disinfection is complete.

Each bundle will be checked by its owner when it is returned to the ward, his extra kit will be added, and all will be locked away in the Invalids' Effects Room for the voyage.

It is highly important that the key of the Invalids' Effects Rooms are always kept in the possession of the Medical Officers themselves. The pilfering of men's kits is a regrettable and too frequent occurrence. If however the key of Invalids' Effects Rooms always remains with the Medical Officer the patients are reassured

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Routine Duties with Sick on Board.(cont.)

and the chances for pilfering are greatly lessened.

All valuables and money should be given up by patients to their ward Medical Officer who will put such things in the hospital safe for safe custody during the voyage.

In a definite place in each ward is kept a list of any patients on the "dangerously ill" or "~~seriously~~ seriously ill" list. A board containing a complete list of such cases is kept in the Duty Room. Daily Orders are also kept in the Duty Room.

Further routine of ward work requires no special explanation.

Diets.

Every cot will have attached to it by three hooks a board which carries a diet sheet. On the board above the diet sheet should be two large slots to carry tickets which are easily visible the length of the ward. One slot will hold a ticket bearing the number of the diet the patient is allowed, whilst the other will hold a ticket showing the man's mess table, or a red ticket marked COT if a cot case.

A diagram of the kind of board required is given on page 86.

The use of this board lies in the fact that, to begin with it is impossible to remember all cases in

THE ADMINISTRATION OF A HOSPITAL SHIP.

Administrative Method.

Diet 2.		COT.							
Diet Sheet.									
	No.	Rank.	Name.		Disease.				
	Unit {								
	Permanent								
	Attached								
		Extras.			Remarks.	Initials.			
Date	Milk	Sugar	Eggs	Bread	Beer	Sour	Salt		
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
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18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
Total									

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Diets. (cont.)

the ward, as the patients are all new.

The easy identification of cot cases, especially at meal times is a great assistance.

On the diet sheet about six columns are provided for each date, and are used for entering any extras allowed the patient by the Medical Officer.

The blank column headed remarks can be used by the M.O. for notes on the case, e.g, "D" would represent that the case required dressing every day. "2D" means that the case requires dressing every second day, and would be entered so each day the case is dressed.

If every diet sheet is plainly visible from the centre of the ward, it will be found to be a help for orderlies and nurses. Cot cases have to be fed in their cots and will be easily recognised.

Patients feeding at the mess tables will take their diet boards with them, and will thus be able to show the diet assigned to them. If space has permitted, the mess tables have all been grouped in one place, and each ward is only responsible for the feeding of its cot cases. When the weather can be relied on, it might prove advantageous to fix the mess tables on deck.

Each day the M.O. does his morning round, and settles the diet of every case for the subsequent 24 hours, and notes it on the diet sheet, or board. As soon as the round is completed an assistant totals the diets and

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Diets. (cont.)

extras, and fills up Forms X. and Y. (Appendix 4.) accordingly. These forms must be at the Adjutant's office by noon each day, and it is only a matter of a few minutes work for him to compile these into consolidated indents which will be taken immediately by the N.C.O. in charge of the dieting to the Quarter Master who will prepare for the issue of the rations, and to the Purser who issues the Medical Comforts.

Appendix 4. shows a useful type of indent form for Rations and Comforts.

It is not usual to find any difficulties in the arranging of places for patients at mess tables. If necessary it can be done from the Adjutant's office if each ward puts on the back of its indent form the numbers of each class of diet which are not cot cases.

The consolidated indents should be in the hands of the issuing officers by 12-15 hours each day, so there should be no difficulty in fixing the hour for the issue of rations at 15-00 hours at the latest.

The 24 hours of diet indented for will include tea on the day of indenting, and last up to, but exclude tea the following day.

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Scales of diet.

For Europeans it is sufficient to have 3 scales of diet, viz. Full diet or No.1.; Light diet or No.2.; Milk diet or No.3. Extras may be given in addition to any one of these diets, or a patient may be put on extras alone.

With Indians it is more complicated, as separate rations and separate cook houses have to be provided for Hindus, for Mahomedans, and for rice eaters.

There is also a class which will not eat cooked rations and which has to be provided with a special non-cooked ration of parched gram, and other substances which require no cooking.

For European diets, either cooks are provided for the hospital which then does its own rationing, or, in cases the ship's company will undertake all the messing arrangements. This latter method relieves the administration of a considerable amount of work, and can often be done on very economical terms.

In 1915 the Company of the ship I was on provided the following full diet for sick at a cost of 2/- per head

Breakfast.	Porridge	Dinner.	Soup.
	One meat dish.		Meat
	Bread, butter, tea.		Pudding.
Tea.	Tea	Supper.	Cocoa.
	Bread & Butter.		Bread & Butter.
	Jam.		Cheese.

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.The care of the Hospital Decks.

We may now dismiss from our minds for a short time all thought of the sick, as they have had their first wants attended to, and are settled down. Any further attentions they require will only call for treatment not dissimilar to that of any other hospital.

In addition to the tending of the sick, we have to keep our hospital clean; not only the wards, but ladders, hatches, flats, alleyways, quarters etc.

My own experience in this direction was singularly happy and instructive owing to the ship's Company providing an Officer to care for our decks, and to take charge of Admiralty and Owner's stores.

From this Officer I learned to expect a degree of cleanliness which hitherto I had never dared to expect.

The sailor from generations of experience has developed his own methods of working which can only be feebly imitated by the novice, even though^u the weather be fine. The ship I joined at the beginning of the war was fitted for Indian Troops, and was fully provided with every class of personnel from M.Os. to Sweepers. With the exceptions of the M.O's and the S. & T. Sergeant all others were Indians of whom probably none had ever before even seen the sea. The first voyage was initiated with extremely bad weather, and the consequences might have been serious, and even now are not pleasant to recollect. Even when the weather abated, and the qualms of sea-sickness subsided in most

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.The Care of the Hospital Decks.(cont.)

~~xxx~~ ~~xxx~~ the difficulty in maintaining even a tolerable standard of cleanliness was so great, that on arrival in Bombay special seafaring men were taken on to carry out the work of cleaning. This alteration proved so satisfactory that gradually many of the original staff were put off and seafaring men were taken on in their places. There is no doubt but that the care of the hospital decks should be under a sailor, and that the military personnel should be limited almost completely to those who have to tend the sick.

In the ship then we would have the M.O's., Warrant Officers, N.C.O's. and Nursing Orderlies alone trained military personnel, but all others should be drawn from a seafaring class.

The troop decks are in the charge of the Troop Officer, and to him is assigned a sufficient personnel to maintain the troop decks in perfect order, and when sick are on board the hospital staff besides attending to the sick will only be responsible farther for the tidiness of wards, cots, pantries, cleaning of brass work etc. As soon as the ship is empty however, the whole staff is divided up into working parties and to each party will be assigned definite duties, such as the washing of paint work, of cots, fatigues for loading rations and for sorting stores etc.

During the voyage the routine will to some extent

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.The Care of the Hospital Decks.(cont.)

depend on the weather conditions.

Each day starts with the morning cleaning of the wards, which however on the first morning will have to be less thorough than usual, as the disinfection of the kits will not be completed and consequently many will still be lying in the wards till ready for storage in the Invalids' Effects Rooms.

If the weather permits all cases, other than cot cases, ~~should~~ should be sent on deck to permit of the wards being cleaned, and cots "made" and tidied. This must not be done too early, as the decks too have to be washed down, and if the sick are up on deck before this is completed they will only hinder the work of the ship's crew.

Daily Routine.

Time should be found each morning for half an hour's physical training for all the hospital establishment.

This half hour of brisk exercise every day is a valuable asset in keeping the men fit, active, and contented. When in harbour, rowing exercise is of great use, and is greatly appreciated by the men.

The C.O. will as a rule do two "rounds" daily. He will do "Ship's Rounds" with the Commander of the ship and his own round of visits to the wards at another time.

The Commander of the Ship is responsible for the

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Daily Routine. (cont.)

detail and practice of "Fire and Collision Stations"

The C.O. details in Daily Orders the Medical Officer and Medical Subordinate for daily duty.

The M.O. on duty accompanied by the Subordinate will inspect all meals during his tour of duty. He will visit the wards twice by night, and personally see all cases on the seriously ill list.

Once during the night he will visit the Establishment Quarters.

The Daily Routine then will be :-

06:30. Reveille

06:30. to 07:00 Washing patients; Cots tidied, and beds made.

07:00 Patients (other than cot cases) to be on deck. Cleaning of wards.
Physical Training.

08:00 Breakfast.

09:30. M.O's. Ward visit.

10:00 Ship's Commander's Rounds.

10:30. C.O's. Rounds.

12:00. Dinner.

16:30. Tea.

17:30. Retreat, Roll call, Orders.

19:00. Supper.

21:30. Lights out.

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Disembarkation.

The process of disembarkation has to be conducted to suit the Embarkation authorities at the Port of disembarkation.

If the voyage is a short one, e.g., a cross Channel voyage. then it is taken for granted that the condition of all the patients is the same as when they embarked, and that no re-classification is necessary.

We have to be prepared to group our patients, at a moment's notice in any method desired by the Embarkation Authorities.

The easiest method of obtaining the data for such grouping is by the card-index system.

Each patient has his record in the form of a label attached to him. It has been one of the duties of each ward to see that every man's kit is clearly labelled.

The office has received within a few hours of embarkation the completed cards of each case from each ward in the ship. From the cards a complete nominal roll of the invalids has been compiled in the admission register book, which will also show the disease, cot NO. and if necessary "Class of case".

If the voyage is to be one of several days duration Medical Officers will be requested when making out the cards to leave blank the space for "Class". Between 12 and 24 hours prior to disembarkation the card-index forms will be returned to the wards, and M.O's requested

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Disembarkation.(cont.)

to complete the classification in whatever way required.

e.g. Class I. Enterics and Dysenterics.

Class II. Cases requiring immediate Hospital treatment.

Class III. Insanes and Infectious Cases.

Class IV. Cases fit to go to Convalescent Camps.

We probably have ~~xxx~~ previous knowledge of the system of disembarkation favoured by any particular port so already have our cases grouped in readiness. The re-grouping of the cases would however be an easy matter with the card-index system.

The Embarkation Medical Officer comes on board and says that he wants all Convalescent cases first. We then take our packets of cards, which are grouped by wards, and pick out from Ward A. all the Class IV cases. We ring up Ward A. on the telephone, and ask them to disembark, say, Nos. 4.7.16. and 21. and so with all other wards.

Classes I, II. and III. follow in similar manner. Preliminary to the actual ~~embark~~ disembarkation "walking cases" of each class may be paraded on deck and checked. Kits are collected from the Invalids' Effects Rooms and labelled. Each patient lays on his cot the hospital clothing he has been provided with, and these are checked and collected by orderlies. As with Embarkation the men's kits disembark with their owner.

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Disembarkation.(cont.)

The rest of the routine of Disembarkation is exactly similar to that of embarkation.

As the disembarkation of each class of case is completed the corresponding card-index forms constituting a nominal roll are handed over to the Embarkation Medical Officer.

Duties in Port.

As soon as the last patient has left the ship each ward will be stripped and tidied.

Invalids' Effects Rooms will first be swept out, and blankets, mattresses, and pillows will be stored in them and locked up.

Medicines, instruments, dressings, and equipment will be locked away in cupboards and in ward store rooms.

All soiled linen will be collected, counted, and handed over to the Quarter Master who will give a receipt for the amount.

Pantry utensils and equipment will be cleaned, checked, and locked up.

At this time any deficiency should be brought to the notice of the M.O. at once, who will investigate and deal with the matter in the usual way.

The immediate investigation of any loss is the greatest safeguard against losses occurring.

As soon as wards have finished their checking and tidying, the whole establishment is grouped into

THE ADMINISTRATION OF A HOSPITAL SHIP.Administrative Method.Duties in Port. (cont.)

working parties for the performance of any duties that may be required of them.

The Adjutant's Branch will be occupied with the arrears of correspondence of perhaps several weeks duration; with the pay of the Establishment; leave and exchanges of personnel; with supplies; with alterations and repairs to the ship; with the cleaning of the ship, and perhaps with arrangements for the reception of another load of sick.

The Quarter Master's Branch will first have to receive all soiled linen, check it, pack it in bags, and pass it ashore to the Embarkation authorities who should there and then exchange it from their stock for a similar quantity of clean linen. The prospect of the recovery of the same linen at a later date is too uncertain to form a working proposition.

The ship's laundry is never of such size or efficiency as to deal with a whole Hospital Ship's washing at one time, so can only be used for emergencies and for the minor work constantly required in a hospital.

Store accounts have to be rendered, and new stores have to be indented for, drawn, and embarked. Old rations have to be moved from the main store to the "turn over" store.

All indents should be prepared on the journey and be ready to be handed in immediately the ship arrives in port.

THE ADMINISTRATION OF A HOSPITALSHIP.

Thus the cycle of life on a Hospital Ship ends with each voyage, and a new cycle is ready to commence.

When the ship returns empty of patients and the voyage is one of several days duration opportunity is taken for thorough cleaning, and perhaps for some repainting.

For Administrative Medical Officers on a Hospital Ship the moments of ease throughout the cycle are few and far between.

MILITARY HOSPITAL SHIPS.Conclusion.

An endeavour has been made in these notes to justify their claim to being "practical" as set forth in the title.

The sequence of events has been taken in its natural order from the selection of the ship to the description of a complete voyage.

The question of selection devolves least on the Medical Officer, and therefore has been dealt with shortly. As regards the fitting-out and equipping of a Hospital Ship, it is most unlikely that, unaided, this duty would ever fall to any Medical Officer to supervise. The work in practically every known case falls to the Admiralty to carry out, but practical suggestions from Medical Officers, I have always found are welcomed.

As before mentioned, it would be to my mind a mere waste of time to attempt to give all details of dimensions of pantries, and other structures, spaces between cots, and other such minutiae.

Better it is, I think, to accept the standard we all know, and to rest content with suggestions for improvement on that standard.

It is with organization and administration that all but a very few Medical Officers called to hospital ship duty will have to deal.

For the working of a Hospital ship there is no standard set, and often no previous experience ^{upon which} to act.

MILITARY HOSPITAL SHIPS.Conclusion.

It has been thought judicious therefore to devote more space, and to enter into fuller detail in the elucidation of what will be the duties of almost every Medical Officer who happens to have to do with Hospital Ships.

A good ship fitted, equipped, and administered on the lines laid down in the text of this work would, I feel sure, prove a pleasure to handle, and a credit to those handling it.

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX"

The following Standing Orders I wrote in 1915 for a Hospital Ship carrying an Indian Establishment.

With very little modification they may be made applicable to a ship with purely British personnel.

GGGGGGGG _____ GGGGGGGGGG

EXECUTIVE DUTIES.

1. Medical Officers.

Wards are allotted to Medical Officers by the Officer Commanding the Hospital. Each M.O. is responsible for the care of the sick and wounded in his ward or wards, and also for the general administration of these wards.

2. Adjutant.

The Adjutant is a Medical Officer appointed by the C.O. to assist him in the administration of the ship. He will be in medical charge of the Hospital Establishment, and of the Ship's Crew, and will perform also such medical duties as may be allotted to him by the C.O.

3. Nursing Sisters.

Nursing Sisters will be allotted to Wards for duty for each trip.

One Nursing Sister will be appointed for Night Duty. When possible there will only be one Sister on duty each afternoon.

Nursing Sisters are responsible for

- a. Keeping temperatures.
- b. Giving medicines.

APPENDIX I

Standing Orders for H.M.Hospital Ship "XXX".

EXECUTIVE DUTIES.

3.Nursing Sisters.(cont.)

- c. The nursing and care of all patients under them.

4. Senior Warrant Officer.

The Senior Warrant Officer (or N.C.O.) is in Sub-Medical -Charge on board the ship, and is responsible to the C.O. for

- a. The discipline in the Medical Staff outside the wards.
 - b. The sanitation of the ship.
 - c. The care of the Medical Equipment Stores.
- and d. He will perform any further duties to which the C.O. may from time to time appoint him.
- e. He will accompany the C.O. on his rounds.

5. Medical Warrant Officers.

Medical Warrant Officers (Assistant Surgeons and Sub-Assistant-Surgeons.) are appointed for duty as required by the C.O.

When possible one will be in charge of the Dispensary and the Operating Theatre.

They will be in Sub-Medical Charge of Wards, or will assist in ward duties if more than one is on duty in the same ward.

They will supervise the cleaning of their wards.

They are responsible to the M.O. of that ward for all Equipment, Instruments, Dressings, Bedding, Linen etc on the charge of the ward.

APPENDIX I.

Standing Orders for H.M. Hospital Ship "XXX"

Executive Duties.

5. Medical Warrant Officers. (cont.)

They are responsible for the discipline in the ward in the absence of the M.O.

6. Quarter Master.

- a. The Warrant Officer or N.C.O. (British) is under the orders of the C.O. to perform such duties as may be required of him.
- b. He is in charge of all rations, except Medical Comforts which are under the Ship's Purser.
- c. He will take charge of any stores which the C.O. may hand over to him, and is responsible to the C.O. for them.
- d. He will take charge of, and supervise the Laundry and Tailor's Establishment.

7. Staff N.C.O's.

- a. Will be in charge of the cook-houses and the Drawing and cooking of rations.
- b. They will be responsible for the disinfection of invalids' kits.
- c. Each will be responsible for the discipline of his share of the Hospital Establishment.
- d. They will be in charge of working parties when the ship is empty of sick.

ORDERLY DUTIES.

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX"

Orderly Duties.

8. Medical Officers

One Medical Officer will be detailed for duty for each 24 hours, from 8 a.m. to 8 a.m.

When on duty he will go rounds twice by night, when he will visit every case on the "Seriously Ill" list.

He will accompany the C.O. on his rounds unless occupied in his wards.

He will visit all meals. All complaints as to rations or cooking should be brought to the M.O. on duty, who will thereupon investigate the complaint.

He is required occasionally to be present at the distribution of rations.

When there are no sick on board, he will inspect the work of the working parties in the wards.

When in port he will not leave the ship without arranging for a substitute.

9. Medical Warrant Officers. (Assistant Surgeons or Sub-Assistant-Surgeons)

a. One Medical Warrant Officer will be detailed for duty each 24 hours from 8 a.m. to 8 a.m.

b. He will receive and report to the M.O. on duty any complaints of rations or cooking.

c. He will go rounds each night at 9:30 p.m. and will take special note of the following

1. That superfluous lights are not being used.

2. That fans are not being used needlessly.

3. That water is not being wasted.

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX"

Orderly Duties.

9. Medical Warrant Officers.(cont.)

4. That in rough weather at sea, or in port
no ports are open or leaking.

In all cases when ports near the water line are found open at night, the matter should be reported to the M.O. on duty.

On completion of his round he will report to the M.O. on duty.

- d. When working parties are working in the wards, the Warrant Officer on duty will direct and supervise the work.
- e. He takes Roll Call and reads Orders (in Vernacular) to all when assembled.
- f. When there are cases seriously ill on board that require constant attention, the Warrant Officer on duty will relieve the one whose case it is, as may be considered necessary.
- g. When in port, he passes all men granted shore-leave as being properly dressed for going ashore, and initials the leave book for each man so passed.

10. Nursing Orderlies.

Two Nursing Orderlies will be detailed for orderly duty daily when no sick are on board.

They will be on duty from 8 a.m. one day to 8 a.m. the next day. One will be present either at the office or the after end of the hurricane deck from 9:30 a.m.

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX"

Orderly Duties.

10. Nursing Orderlies.(cont.)

till 5:30 p.M. They should relieve each other at two hour intervals.

11. Night Duty.

When sick are on board night duty will be from 9 p.m. to 6 a.m.

The following personnel will be on night duty.

1 Nursing Sister. 2 Nursing Orderlies. 1 Medical Warrant Officer. 1 Topaz.

A notice will be placed in each ward with a list of serious cases for special attention by those on night duty. A general list of all serious cases on the ship is kept in the Duty Room.

The Orderly M,O, should visit all these cases on his night rounds.

12. Guards and Sentries.

- a. Each sentry will be on duty for two hours. Duty will be taken in rotation by the whole Guard.
- b. Unless otherwise stated or ordered, the sentries will be single.
- c. When in port an extra sentry will be posted day and night at the gangway head.
- d. When wounded are on board:-
6:30 a.m.to 9:30 p.m.

The sentry will be on duty on the hurricane and poop decks, and will also perform orderly

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX".

12. Guards and Sentries. (cont.)

duty for the C.O. and Office.

9:30 p.m. to 6:30 a.m.

The sentry will go from No.1 Hatch along the entire length of the ship to the after end of the poop deck, He will then go down into the wards from after end to the forward quarters.

- e. When the ship is in port he will similarly, by night go round the decks above and below.
- f. Nursing Orderlies may be employed for Guard or Sentry duties if required.

13. Duties of Guards and Sentries.

a. When wounded are on board.

By day. 1. He will keep the wounded on deck within the space allotted to them.

2. He will act as Office Orderly.

3. He will report any breach of discipline that comes to his notice.

By night 4. He will prevent any waste of lights, ~~fa~~ fans, or of water.

5. He will see that all ports are securely shut in stormy weather.

6. In case of "Fire" or "Man Overboard"

Vide para 35.

b. When in port.

The gangway sentry will

- 1. Prevent any unauthorized person coming on board.

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX".

13. Duties of Guards and Sentries.(cont.)

2. Ascertain that the leave of every person going ashore has been sanctioned, and that each has reported to the Warrant Officer on duty.

c. When in port or travelling empty.

The sentry on duty will in addition to duties 3,4,5, and 6, in above section (a), also prevent traffic through the wards, and see that the bulkhead doors between the hospital wards and the Establishment's quarters are kept shut.

14. Routine of work.

a. When wounded are on board.

6:30. Reveille

6:30 to 7. Beds to be made and cots tidied.

7. to 7:30. Physical drill for orderlies. Morning tea for patients. All except cot cases will come on deck to allow wards to be swept and washed.

9:30. Dressings and Ward-work commence.

10. All patients should be in the wards and remain there till after the C.O has been "rounds".

10:25. Orderly -room and Guard Inspection.

10:30. C.O's. rounds(after which cases not requiring dressing may go on deck.)

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX".

14. Routine of Work.(cont.)

12 noon. Mid-day meal for patients.

5:30 p.m. Retreat. Roll Call. Orders.

7.p.m. Evening meal.

9:30 p.m. Lights out.

b. When travelling empty.

6:30. Reveille.

7. to 7:30 Physical drill for orderlies.

7. to 9. Working.

10 to 12 Working.

12. to 2. Mid-day meal.

2. to 4:30. Working.

5:30 p.m. Retreat and Roll Call, when orders w
will be read out by the Warrant
Officer on duty.

9:30 p.m. Lights out.

c. When in Port.

As when the ship is travelling empty except
Muster and Roll Call at 8 p.m.

N.B. The above routine may in wet, cold, or stormy
weather be modified as necessary.

15. Working Parties.

When wards have locked up Equipment etc. after
the wounded have disembarked, and M.O's. have no
further use for ward staff, separate working parties
will be made up from Orderlies and Topazes.

All men not otherwise detailed for duty will join

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX".

15. Working Parties.(cont.)

these working parties.

N.C.O's will be in charge of these working parties.

Hours of working.

For Orderlies.(when no physical drill) 7.to 9

" " (with Physical drill) 8.to 9.

For others 7.to 9; 10.to 12; 2.to 4:30.

The Topazes work under the Troop Officer.

16 Duties.

As far as possible the work will be divided as follows.:-

Orderlies. a. Will scrub woodwork in wards,diet sheet boards etc.

b. Will polish metal work.

c. Will make beds.

d. Will do fatigues in Store Rooms, Dispensary etc.

e. Will wash cots.

f. Will wash paint work.

Topazes will scrub floors,wash and keep clean latrines,berth tins etc.

Detail of work for each day will be given out the previous evening at roll call to N.C.O's in charge of parties.

17. Method of work for cleaning out Wards.

When possible only one party will be at work in any one ward at one time.

As soon as practicable after the disembarkation of ~~the~~
ca
A

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX"

Method of work.(cont.)

the invalids, Lee-boards, and Diet-Sheet boards will be collected and stored in the bathrooms ready for washing.

Berth tins will be stored and collected by the Topazes 1st day. Orderlies commence with wood-work in ward E. and at the same time wash the cots and the roof of ward D.

Topazes commence with washing berth tins in some other ward, or with scrubbing the "flats".

The orderlies then pass on to the woodwork in ward D and to the cots and roof of ward E.

Cots should not be washed until paint work of sides and roofs have been finished.

18. Stores.

A detailed list of the contents of each store will be kept in the Dispensary.

Briefly the stores are as follows:-

Under the Troop Officer.

All disinfectants and cleaning gear. Berth tins, feeding mugs, dishes, and cutlery. Laundry supplies, mattresses, pillows, sheets, pillow-slips, blankets and life belts.

N.B. Issue stores of the above are under the Quarter Master on whom all indents should be made.

Under the Quarter Master.

All rations and clothing. Tailor's supplies, cooking

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APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX"

18. Stores.

cooking utensils, tools.

Also the issue stores of bedding and napery.

Under the Senior Medical Warrant Officer.

Medical Equipment, Enamel-iron ware (except feeding ~~dish~~ dishes) splints, crutches, cradles, drugs, instruments, dressings etc,

19. Issues of Stores.

For each store will be kept a ledger in which will be entered all receipts and issues. The balance on hand should be shown in another column.

For each store will be kept issue and receipt books. These will be made out in duplicate a copy being kept by each party .

Expendable and non-expendable articles will always be made out on separate vouchers.

When articles on an issue voucher are returned to the store complete the issue voucher may be cancelled.

When however all the articles on a voucher are not returned at one time, a receipt voucher for the articles returned has to be made out.

Deficiencies can only be accounted for by the C.O. of the hospital.

Immediate investigation of any loss must at once be made by the Officer responsible and after due investigation reported to the C.O.

APPENDIX I.

Standing Orders for H.M. Hospital Ship "XXX".

19. Issues of Stores. (cont.)

Rations - Medical Comforts. - Extras.

Indents for rations and for Extras should be submitted on their separate forms.

These indents must arrive at the office before noon.

Hospital Clothing.

Indents for hospital clothing should be by "sets" as they are prepared in sets for each cot.

Life belts

Life belts may be obtained on indent from the Troop Officer. One for each cot must be kept permanently in the wards.

20. Embarkation of wounded.

a. As soon as the working parties have completed the work in the wards, the staff will be returned to their respective wards to enable M.O's to complete their preparations to receive wounded.

b. Two days before wounded are expected to arrive, separate indents on each store should be submitted for what should be necessary for the voyage.

The next day articles indented for will be given out at a stated time.

c. Before the embarkation commences every man not detailed for other duty will fall on on the quay at the after end of the ship.

If no shore stretcher parties are supplied, one N.C.O. will tell off the men mustered on the quay

Appendix I.

Standing Orders for H.M. Hospital Ship "XXX".

20. Embarkation of wounded.(cont.)

for/their respective duties in the unloading of the train, the lining up of the patients, and the loading of the ship.

All kits must accompany their owners on to the ship so men must be told off to carry the kits of the men unable to carry their own.

- d. Each case will be allotted a cot at the table on the quay, and will be given a coloured label with with the cot number on it.

As each case is allotted a cot the cot number ~~wix~~ will be crossed off the plan and at the same time the diet required for the case entered.

The clerks will either tick off each case from the existing nominal rolls, and enter on them the cot allotted, or if no nominal rolls are supplied but are necessary before the ship leaves the port they will be made on the spot by as many clerks as are at the moment available.

- e. The Senior Medical Warrant Officer assisted by N.C.O's. will direct the cases to their wards from the gangway head.
- f. Three Goanese will be detailed and trained by the Troop Officer for working each lift.
- g. Cot cases will have the precedence in embarkation

When no shore stretcher parties are available as stretcher bearers, all cot cases must be embark-
-ed ~~first~~ first, as the orderlies from the other

APPENDIX I.

Standing Orders for H.M. Hospital Ship "XXX".

20. Embarkation of wounded. (cont.)

wards will be required to carry the wounded.

They will go alternately to the forward and after gangways.

Stretcher parties consisting of 8 Orderlies from Wards D and E. will carry the cases from the after lift to the forward wards.

The staffs of wards A. B. and C. will receive the cases in their wards.

h. Unless there are orders to the contrary card-index forms will be made out for each man as soon as possible after his arrival in the ward. The completed cards will be sent to the Adjutant -'s office.

Each man, other than a cot case, will be given a bath on arrival, and given an issue of hospital clothing on emerging from the bath-room.

Milk and a biscuit, or hot soup and a biscuit, should be ready for all cases on arrival in the ward.

All articles of kit(except such as will be destroyed by steam sterilization) will be tied loosely in a blanket, and put beside the patient's bed, and to each bundle the label bearing the cot number should be tied.

These will be removed from the ward by twenties for disinfection, brought back, checked by the owner, and placed in the Invalids' Effects Rooms

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX".

20. Embarkation of wounded.(cont.)

- i. All should be informed that no responsibility will be taken for any losses from any patient's kit left in the ward.

Valuables should be handed over to the M.O. for safe custody.

- j. If during the voyage any patient changes his cot, the alteration must be notified to the office.
- k. The bedding of all unoccupied cots should be returned at once to the ward store room.

21. Disembarkation of wounded.

- a. The day before arrival in port for Disembarkation card-index forms will be sent to the wards for the completion of the "Class of Case"

- b. Each man's kit will be returned to him and each bundle must be clearly labelled.

Men whose kit is entirely, or almost entirely lost will have that fact noted on their cards.

- c. Prior to disembarkation men will be dressed in their own clothes, and all hospital kit recovered from them.

Men will be disembarked by classes.

Each ward will be warned by telephone of the men to be disembarked as the turn of each comes. Cot numbers only will be given.

Walking cases of each class will be mustered on deck prior to leaving the ship, and so can be checked

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX".

21. Disembarkation of wounded.(cont.)

- d. Patients must always disembark with their kit.
- e. Assistance for disembarkation will be ordered when necessary as for embarkation.
- f. Each patient's medical record card will be attached to him so as to be clearly visible.
- g. One M.O. will be detailed to give such assistance as may be required to the Officer in charge of the shore stretcher parties.
- h. Card-index forms are handed over to the Embarkation Officer, and constitute a nominal roll.
- i. As soon as disembarkation is completed each ward will :-
 - 1. Hand over all soiled linen to the Quarter Master, and receive a receipt from him for the amount handed over.
 - 2. Clean out the Invalids' Effects Room, and store in it the ward mattresses, pillows, and blankets
 - 3. Store all drugs, medicines, instruments, and moveable fittings in locked cupboards or Ward Store Rooms.

The N.C.O. in charge of the pantries will clean, check, and lock up all the Mess table gear.

APPENDIX I.

Standing Orders for Hospital Ship "XXX".

22. Rations, Extras, and Hospital Comforts.

N.C.O's. in charge of cook-houses draw rations at 3 p.m. for the number of men they have to provide for.

When wounded are on board rations will be issued daily.

When in port or travelling empty, rations will be issued for three days at a time.

No one except N.C.O's in charge of cook-houses is allowed to draw rations.

23. Cook-Houses.

N.C.O's. are appointed in charge of Cook-houses, and are responsible for the amounts of rations drawn and cooked.

Every man on board will receive a cooked ration. No individual cooking is allowed.

The N.C.O.- in-charge is responsible for the cleanliness of the cook-houses and galley stores.

24. Meals.

All meals must be taken in the places allotted for that purpose.

Meal hours may be altered from time to time if considered necessary.

For Indian Troops due space will be allowed for different castes.

Cot cases only, are permitted to take meals in the wards.

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX".

24. Meals. (cont.)

When sick are on board M.O's. are requested to arrange that the lightly wounded assist in the distribution of food to the patients.

General.

25. Decks.

The Hurricane Deck on the starboard side is reserved for Officers.

The Foc'sle Head is reserved for the crew.

No one is allowed on the bridge except on duty.

26. Quarters.

All persons occupying quarters whether in 2nd. Saloon, Guardroom, or forward quarters, should keep the doors open and hooked back during the day, and the ports open at all times that weather permits.

All are cautioned against the needless use of fans and lights.

Each person is responsible for the tidiness of the quarter he occupies.

A kit inspection will be held from time to time before rounds on the Hurricane Deck. On these occasions all kit should be removed from the quarters.

Any kit not required may be stored in the baggage room.

The baggage room will be opened weekly (generally on Sundays) at a time which will be notified in orders so that persons may inspect or recover articles stored

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APPENDIX I.

Standing Orders for H.M. Hospital Ship "XXX".

26. Quarters. (cont.)

there.

Bedding from the Guard-room and quarters will be aired on Tuesdays and Sundays on the Foc'sle Head from 2 to 4 p.m.

Food stuff must not be kept in the quarters. Any food so found will be thrown overboard.

Feeding utensils must be kept tidy and clean.

27. Laundry and Tailor's Establishments.

The Quarter Master will supervise the washing and mending of clothes, and the Laundry and Tailor's Establishments generally.

Clothes to be washed will be handed in to one of the Quarter Master's Assistants on the forward well deck as detailed in orders.

Clothes for repair will similarly be handed in to a Quarter Master's Assistant. Detail in orders.

All khaki will be washed by the laundry. Private clothes may be washed by the men themselves in the smoking space on the forward well deck. Buckets and soap for this purpose are provided and may be obtained from the N.C.O. in charge of the cook-houses.

Washermen are not allowed to wash for the crew of the ship.

28. Dress.

All men must be dressed in uniform, unless permission to wear other clothes be given.

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX".

28. Dress. (cont.)

For working party duty, and for fatigues mufti may be worn.

When mufti is worn other than for "working" and fatigues, men must turn out smartly and clean.

29. Saluting.

Saluting Officers is unnecessary on board ship, unless when addressing an Officer or being addressed by one.

30. Smoking.

Smoking is strictly prohibited in the hospital decks and in the quarters.

31. Blankets.

Hospital blankets may not be brought on deck.

32. Money.

No responsibility will be taken for any money borrowed or lent amongst the patients or the establishment. No deduction from pay will be considered to make good any private debts contracted on board among the establishment.

33. Visitors.

Visitors are not allowed in the hospital without the sanction of the C.O.

The Sub-Medical Staff and establishment may not bring any visitor on board without the permission of

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX".

33. Visitors. (cont.)

the Adjutant of the Ship.

34. Shore Leave.

Medical Officers not on duty may go ashore when in port.

They may not remain the night ashore without permission.

Other ranks may not go ashore without permission.

Before going ashore all will have their names written in the leave book kept at the gangway when in port.

Uniform must be worn when ashore.

All must be on board for roll-call.

35. Man Overboard.

In case of "MAN OVERBOARD" one or two life-belts should at once be thrown from the rail into the water as near to the person as possible without actually hitting him.

A flare is attached to each life-belt, which should light up on hitting the water. If it be night time it should be made certain that the flare ignites, and if necessary others should be thrown till one ignites.

In all cases a life belt should be thrown first, and simultaneously the alarm shouted as loudly as possible.

The Officer on the bridge must be informed at once.

MILITARY HOSPITAL SHIPS.APPENDIX I.Standing Orders for H.M. Hospital Ship "XXX".36. Fire.

In case of " Fire " breaking out, whilst efforts are being made locally to stop the fire, the Officer on the bridge must be informed immediately.

IF WOUNDED ARE ON BOARD THE ALARM MUST NOT BE RAISED, AS A PANIC MIGHT BE CAUSED.

OFFICERS.37. Reports and Returns.

As soon as possible after the embarkation of sick, each ward is required to fill up a card index form for each patient, giving :-

Regtl. No.	Rank.	Unit	Permanent Attached
------------	-------	------	-----------------------

Injury or Disease.	Cot No.	Class of Case
--------------------	---------	---------------

The "Class of Case" will be left blank except on ~~xxx~~ short voyages.

The day before arrival in the Port of Disembarkation the following information is required:-

1. Operations performed.
2. Cases dangerously ill, or died during the voyage
3. Card-index forms will be returned for the completion of the column "Class of Case".

38. Deficiencies.

At the end of each voyage ward stores should be checked.

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MILITARY HOSPITAL SHIPS.

APPENDIX I.

Standing Orders for H.M.Hospital Ship "XXX"

38. Deficiencies. (cont.)

Breakages or losses must be accounted for at once on a Loss Statement, which should be sent to the C.O. who alone has the power to write off losses.

n39. Ship's Surgeon.

One M.O.(usually the Adjutant) will be detailed to look after the hospital establishment, and the Ship's crew. He will be responsible for the sanitation of the ship outside the hospital decks.

He will sign the Bills of Health, and be ready to meet the Port Health Officer on arrival at ports and to give him any information required.

40. Diaries.

M.O's. should keep a brief diary of current events.

Cases of particular professional interest should be noted therein.

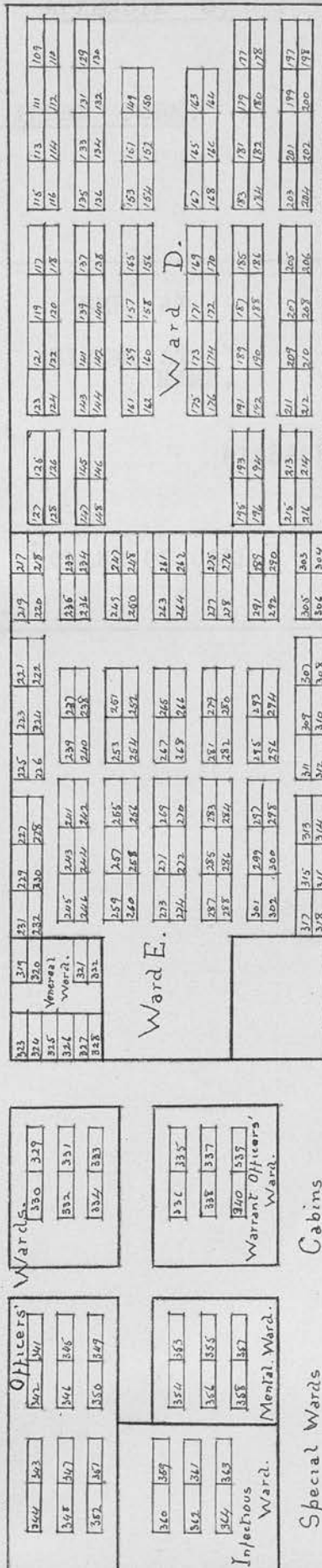
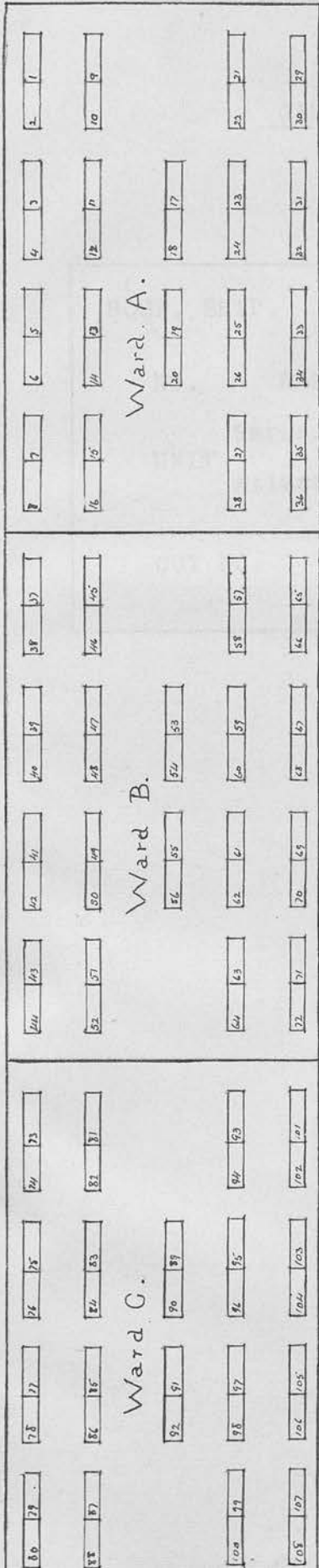
Army Form C.2118. is available on board for the purpose.

41. Dining out.

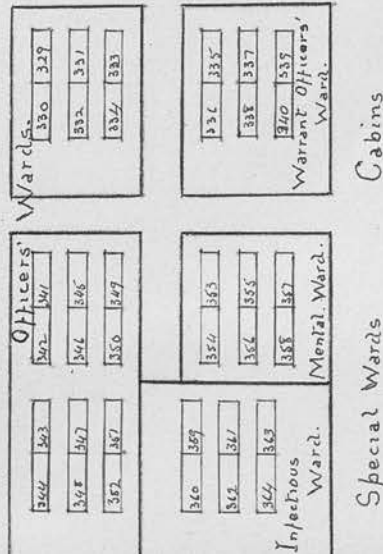
Officers are requested to inform the Head Waiter if they are going to be absent from meals, or are going off on leave.

APPENDIX 2.

"THEATRE" PLAN OF WARDS.



In Wards D. and. E. all lower berths are even numbers.



Diagrammatic Plan of Cots on Hospital Ship "XXX". $\frac{1}{4}$ Size of full sized Plan.

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APPENDIX 3.

CARD - INDEX FORM.

HOSP. SHIP.	EMB. AT	ON	
NO.	RANK.	DISEMB. AT NAME.	ON
UNIT	Permanent. Attached.	DISEASE	
COT NO.	CLASS OF CASE.		

APPENDIX 4.

The indent forms shown on the two previous pages are of a particularly useful pattern in that they serve a triple purpose.

- a. They may be used by each ward for their daily indents. In such case the third line, and the horizontal column for dates will be erased.
- b. They may be used by the Adjutant for making a daily combined indent. In this case too the dates column is omitted, but the column for each ward used and the total entered.
- c. By erasing the horizontal column of "Wards" the totals indented for, over a period of 14 days may be kept. A single voyage very rarely extends beyond 14 days.