

# Navy Operates First Exclusive Hospital Ship—By H. O. BISHOP



Top—Commander R. C. Holcomb, a medical officer of the Navy, who is in command of the U. S. Hospital Ship, Relief.

Center—United States Hospital Ship, Relief.

Bottom—Operating room on the Relief.

**T**HE American Government has put into commission the first ship in the world built from the keel up solely for military hospital purposes. This innovation of naval architecture has been given the appropriate name of Relief. It will care for the comfort and welfare of the sailors and marines of the United States Navy.

Equipped with every modern device to aid in relieving sick and wounded, and with a bed capacity of 500, the Relief incorporates in design and equipment all the appointments and advantages of a modern hospital. This assures the Navy personnel, however far from home ports it may be, that in case of sickness or injury it can expect the same facilities for diagnosis and treatment that are accorded residents of any of the large American cities in municipal hospitals.

Not only is it prepared to care for the sick and injured, but the Relief is also fitted as a fleet medical supply depot so that she may fill ships' requisitions for emergency medical supplies. She also is provided with a field hospital with tentage, drugs, instruments, ranges, cots, ambulance, and various other supplies, so that in the event of a catastrophe like the Baltimore fire, the Galveston tidal wave, or the San Francisco earthquake, she can render valuable aid by sending carefully trained men ashore and quickly establishing a field hospital.

This is the second hospital ship named Relief in the American Navy. The other served as a hospital ship with the Army during the Spanish-American War and later in the Philippine insurrection and Boxer uprising in China. At the time of the cruise of the battle fleet around the world, she was placed in commission with the Navy and accompanied the fleet as far as the Philippines where she is today. The Navy has three other hospital ships, the Solace, Mercy, and Comfort, all ships of honorable and efficient service during the Great War. These ships, however, were merely converted from merchant ships for hospital purposes.

As long ago as 1910 the general board of the Navy recommended that a hospital ship be included in the building program of the Navy. It was not until 1916 that Congress appropriated the money to build one. The keel was laid in 1917 but because of the war, construction was suspended until 1919. The Relief was recently completed.

The Relief is 483 feet long, about 10,000 tons displacement, twin screw, oil burning, and turbine propelled. In accordance with the provisions of the Geneva Convention and the Hague Conference she is painted white with a wide green stripe from stem to stern. This green stripe denotes a military hospital ship. Were she a Red Cross Hospital Ship, according to the provisions of these conventions, there would be a red band. Painted on the side of her hull and on the side of her stack are large red crosses. There are likewise on her upper works red crosses showing skyward for identification by hydroplane or airplane, that her neutral and humane mission may not be mistaken, and to establish her identity at night the red cross and other markings can be illuminated.

For boarding the Relief from a boat, a much larger platform is provided than is encountered at the gangway of an ordinary ship, this platform being large and roomy to provide for handling stretchers. In the after part of the ship there is a specially designed apparatus for lifting a patient from a boat in a splint stretcher. This apparatus is constructed on the principles of the quadrant lifeboat davits, and they are located well aft where there will be the maximum lee in a seaway. From the gangway one steps immediately into the hospital division of the ship. Here the wards are located. At the gangway entrance on both sides of the ship are

located small operating or dressing rooms. Here the injured cases may be received and cleaned up before being sent to the wards.

The hospital wards and utilities are located in the comfortable midship space of the ship where there may be the least amount of pitch. There is a forward and after group with elevator service for each group. The second deck is the connecting passage so that there is access by stretcher between the hospital departments without going out into the open; thus such special rooms as the X-ray room, operating room, hydrotherapeutic, dressing room, and so on, are available from all parts of the ship.

The typical ward consists of standees of berths which may be banked in two tiers or as single berths. The berth is detachable, so that a patient may be handled if necessary without removing him, and is accessible if necessary from both sides. The berth is much wider than the usual ship berth. Its ready adjustability promotes the ease of handling the sick. The patients' heads are in the direction of shear (sear is the slant of a deck in the fore and aft direction) and this very necessary requirement of having all heads forward is taken advantage of in the arrangement of the lighting. Because the overhead decks of a ship, or ceilings, are low, and because the sick lie on their backs looking upward, special care has to be taken to keep the light from shining in the patients' eyes. As all heads are directed forward it is only necessary to place the lights in such position that they will be over the fore and aft aisles and a little forward of the athwart ship aisles and then put a screen on the forward side of each light. This results in a light free from all disturbances. At each berth, there is a portable comfort or utility light, which may be used for reading.

The wards are excellently ventilated. The air supplied the wards is first heated by thermo tanks and then forced into ward spaces. Adjacent to each ward are such rooms as toilets, baths and wash rooms, linen rooms, pantries and quiet rooms. The decks of the ship are wide and spacious and are provided with fittings to care for 100 or more swinging cots.

On the main deck near the gangway is the outpatient department. This is a group of rooms which while convenient and accessible to all wards by elevator,

is likewise located so that patients sent from other ships for special examination, or co-operative diagnosis or treatment, and who will not remain on board as patients, may be cared for without invading the hospital precincts. Each of the larger ships, like battleships, has its own medical department with splendid equipment, but the medical officer often desires the assistance of consulting specialists, and in this out-patient group, are the X-ray and X-ray study rooms, the eye, ear, throat and nose rooms, the laboratory and dental department. All rooms are available for co-operative diagnosis not only to the wards of the hospital ship but also to the wards or sick boys of the ships of the fleet.

The after part of the ship is designed to care for contagious diseases. As the ship rides to wind or breeze this division would be to the leeward. There are four small wards for these cases, each with its own toilet and provided with adequate means for disinfection and prevention of spread of contagion.

There are many special rooms on the boat.

A splendidly planned operating room two decks in height with excellent natural and artificial lighting and ventilation and with such accessory rooms as etherizing room, scrub-up room, sterilizing room, and dressing room and lobby. These rooms are on the upper deck adjacent to the sick officers' quarters. Most of the acute service wards are located on the second deck consisting of such special departments as the endoscopic room, two small operating rooms, and acute treatment room, and the hydrotherapeutic and thermo-therapeutic departments. On the main deck well aft are such rooms as the embalming, sterilizing, and incineration rooms.

For preparation of food there are a main galley and a special diet kitchen. In the main galley food for the well is prepared. The special diet kitchen is fitted with electric ranges, and various other appliances for preparing the special diet for the sick. From this room the food is routed to the various ward pantries and to the bedside by means of portable cafeteria. By this method hot food for those in bed is assured.

One interesting feature on board the Relief is a mechanical cow which provides milk for the sick. For years everybody has been familiar with partially dried or evaporated milk known as condensed milk or evaporated cream which is heavily sweetened by the addition of cane sugar. The milk made with the mechanical cow is a reconstructed milk and the process is simply one of taking ordinary milk apart and putting it together again, these parts when separated having very good keeping qualities.

When it is desired to reconstruct the milk, unsalted butter and milk powder are brought together in a definite proportion of water, mixed and then put through an emulsifying process, producing a palatable milk of any degree of cream richness desired. As something over four-fifths of milk consists of water, some idea may be obtained of the bulk eliminated by handling the product in this way. As an evidence of the practicability of this process, when the city of Nitro, West Virginia, grew up over night, with a population of 25,000 inhabitants, no milk supply was in sight. But by means of the mechanical cow, reconstructed milk was produced.

It is entirely possible also to go a step further and by using a flavoring extract to obtain a product that only needs to be frozen to make ice cream. As the freezer is stationed alongside the mechanical cow, the ice cream mixture can be poured from the one into the other and the finished product is ready for dessert.

A spacious laundry equipped with all modern machinery is connected by elevator with the several decks, linen stacks, sorting and linen repair room, in which are located an electric marking machine and electric sewing machines.

The operation of the ship requires a crew of 400 officers and men. They are divided into a deck, engineering, supply and medical department, each a coordinating and co-operating division. In addition to the men of the hospital corps comprising the medical department for the care of the sick there is detailed a group of trained women, members of the Navy Nurse Corps.

The ship is commanded by Commander R. C. Holcomb, a medical officer of the Navy.