

# SCIENTIFIC AMERICAN

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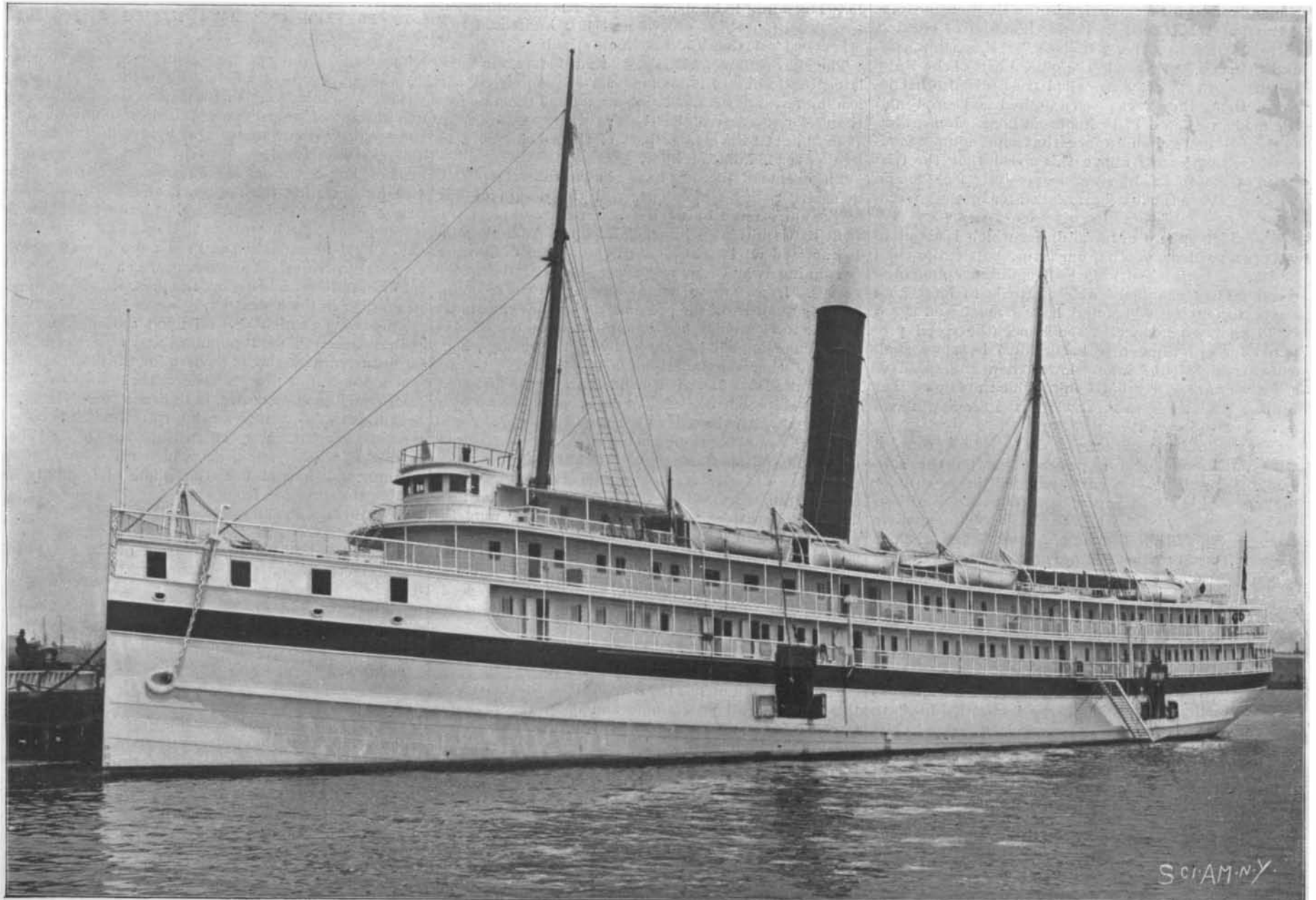
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MAIN DECK, FORWARD WARD OF "RELIEF."



Photograph by E. Muller.

UNITED STATES ARMY HOSPITAL STEAMSHIP "RELIEF."—[See page 88.]

## OUR ARMY AND NAVY HOSPITAL SHIPS.

The United States has now in commission two very complete hospital ships, and it is understood a third will be soon added. The "Solace," formerly the coastwise steamship "Creole," was the first fitted out, and under the auspices of the Navy Department, but was soon followed by the "Relief," erstwhile the Portland Steamship Company's "John Englis," which belongs to the War Department. Neither is a hospital ship, in the general acceptance of the term, since their main purpose is solely to afford communication between the hospitals in the field and the ships on sea duty and the general hospitals, naval and military, along the seaboard.

The "Solace" is 375 feet long, of 3,800 tons displacement, and capable of a speed, in emergency, of sixteen or seventeen knots per hour. Aside from the reservations for fuel storage—and the bunks alone accommodate 850 tons—the hold and cargo deck are given up to stores—ship's stores, pantry supplies, medical, surgical, and hospital necessities—and a large sterilizing plant. On the main or berth deck are blowers for promoting artificial ventilation, quarters for the crew, hoisting engines, etc. and immediately abaft a large ward, with berth and cot accommodations for one hundred patients; well aft is the emergency ward with fifty swinging cots. Both wards have closets, bath rooms, and an abundant supply of hot and cold water contiguous, and communicate with the deck above, the forward one with an elevator to the operating room, the latter with the cabin reserved for convalescents and general lounging purposes. Between the berth deck wards are the laundry, drying, cold storage, and engine rooms, the artificial ice plant, and quarters and mess room for apothecaries, petty officers, nurses, etc.

Forward, on the cabin deck, is the operating room before mentioned, tiled with interlocking rubber disks, and ceilings and bulkheads white with enamel paint, permitting thorough cleaning and sterilization. The furnishings, too, are of enameled steel, and a complete outfit of surgical instruments and appliances, including sterilizing apparatus, are furnished. Adjoining are lavatories and dispensary, the latter connected by telephone with the wards and surgeons' quarters. The cabin and mess room of the senior members of the medical staff are immediately abaft the operating room, next to the gangway and boiler space. Then follow the space occupied by the engines, the state rooms for invalid officers and junior members of the medical staff, and, lastly, the convalescents' cabin and mess room.

Everywhere an abundance of both light and ventilation is conspicuous. The quarters for the ship's officers are on the promenade deck, the afterpart of which is fitted with stanchions and appliances for housing in with canvas screens and awnings, to form an isolation ward for contagious maladies, should occasion demand.

Two steam launches, fitted with platforms for the accommodation of the ill or wounded, form a part of the ship's boat complement, and special in and out hoisting apparatus insures the handling of the unfortunates with a minimum disturbance of position. The patient can be moved lying in his cot or hammock, if desired.

The "Relief" is somewhat smaller than the "Solace," being but 328 feet in length and 3,500 tons displacement and one or two knots slower. She is divided in five wards for the accommodation of patients, two on

the forward and after portions of the berth deck respectively, two similarly situated on the cabin deck and one forward on the promenade deck, the total berthing capacity being about 300, though this can be considerably extended in an emergency. The surgical ward is aft on the berth deck, and is joined on the starboard side by the operating room, that, as in the "Solace,"

and that insures careful and proper medical treatment for the ill and wounded, and the best of comfort while in transit to their homes or hospital assignments.

## A RELIC FROM THE WRECK OF THE "MAINE."

When the gunboat "Yorktown" sets sail from the navy yard at Mare Island, San Francisco, she will carry on her deck a substantial memento of the wreck of the "Maine" in the shape of one of the 6-inch gun carriages that formed a part of the armament of that ill-fated ship.

Among the many objects that were recovered from the "Maine" during the diving operations which were carried on between the date of the explosion and the declaration of war, was the gun carriage for a 6-inch rifle which is shown in the accompanying illustration. It was brought to Norfolk and placed in the scrap heap at the navy yard, the injuries which it had received in the explosion being such as to render it, in the opinion of the ordnance officers, unfit for further use. It was due to the activity of Admiral Dewey that the discarded gun mount received a sudden and unexpected value as a part of our reserve stock of gun material. It will be remembered that in the Manila fight a shell landed on the "Baltimore" and did a considerable amount of mischief, exploding a case of ammunition and disabling a 6-

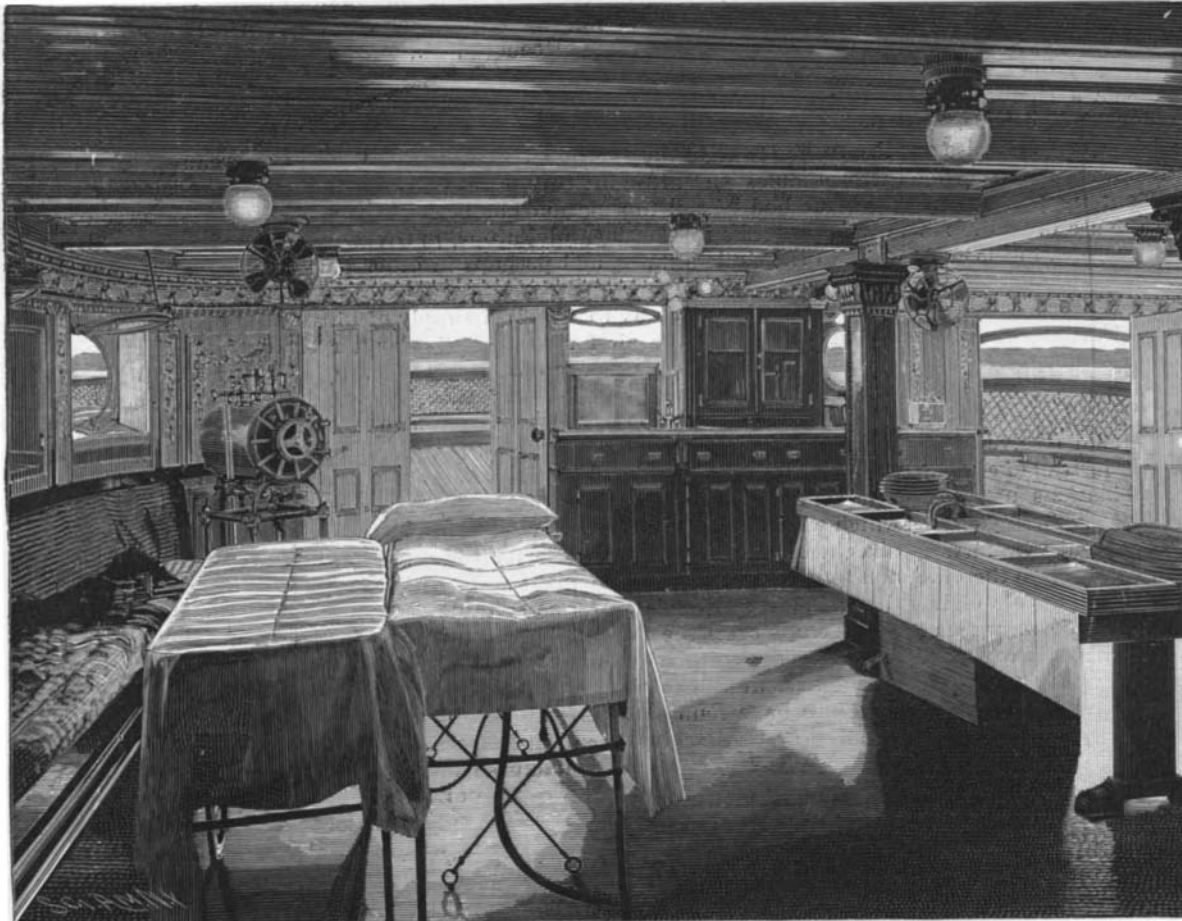
inch gun carriage. It was impossible to supply a new carriage from the reserve stock, as this had been entirely depleted in supplying the auxiliary cruisers. Accordingly orders were given to remove one of the 6-inch carriages from the "Yorktown," which is undergoing repairs at Mare Island, and ship it down to Manila.

Of course, the deficiency on the gunboat had to be at once made good, and the discarded mount from the "Maine" was therefore pressed into service. Fortunately, the only serious damage to the mount was the break which is shown in our engraving, part of the web of the casting at the rear of the gun having been broken away. The broken portion, which has now been repaired with a strong patch, is not directly affected by the shock of discharging the gun, and for practical purposes the "Maine's" gun carriage, which is probably by this time mounted in place on the deck of the "Yorktown," is as serviceable as ever. The "Yorktown" will very shortly be on its way to join the fleet of Admiral Dewey, and it is not unlikely that the "Maine" relic will perform its share in the active operations of the war. As shown in our illustration the gun carriage is lying upside down, and is resting on the trunnion bearing brackets and on the lugs to which the hydraulic recoil piston rods are bolted. The two recoil cylinders are clearly seen, as is also the fracture to which we have above referred. It will be seen that the rear bearing of the shaft which carries the traversing gear wheel has broken away from the gun carriage. The repairs of which we have spoken were made at this point.

## A Novel Light.

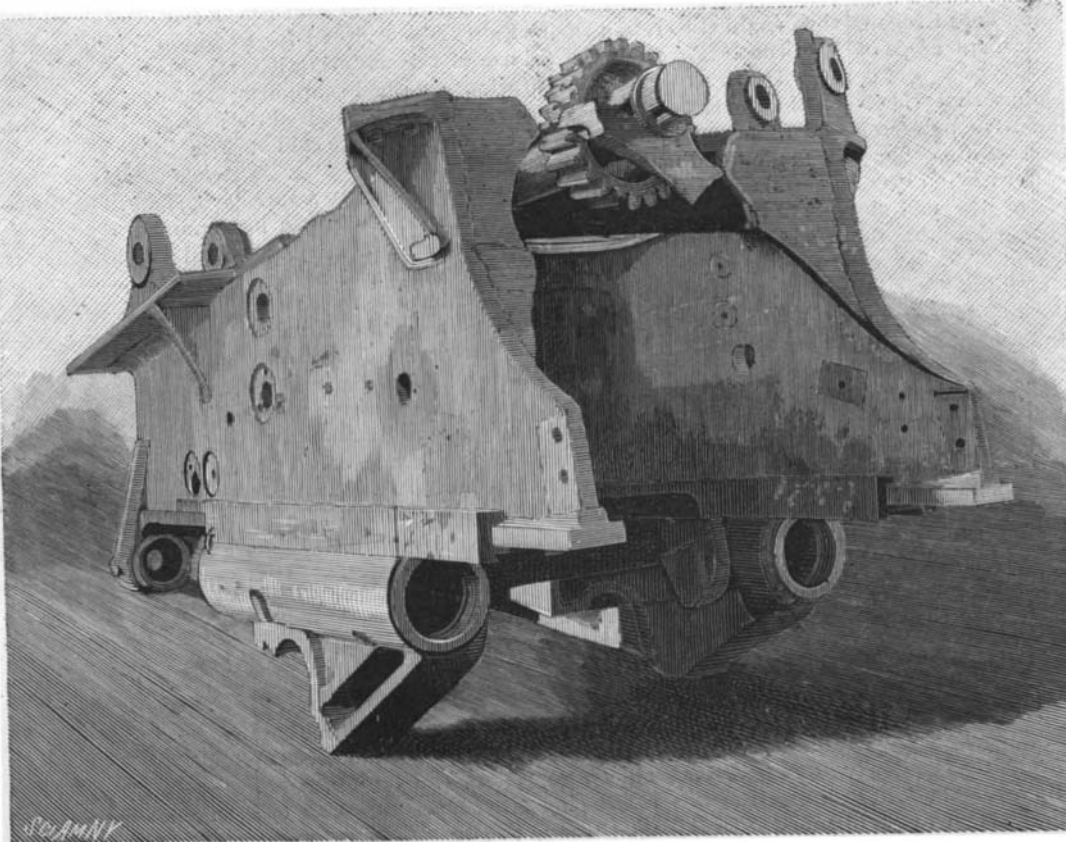
The lighthouse on Armish Rock, in the Hebrides, is about 500 feet from the shore. To avoid having an attendant on the rock, the light is produced on the shore and projected across the water upon a mirror in the lighthouse, the mirror reflecting the light in the desired direction.

PHYSIOLOGISTS say that of all people in middle life at least one-third have one ear in some degree affected by deafness.



OPERATING ROOM ON UNITED STATES AMBULANCE SHIP "SOLACE."

is tiled with rubber and the bulkheads protected by enamel paint. The illustration exhibits two operating tables, a steam sterilizer immediately to the rear thereof, and the array of trays and shelves and cases for appliances on the right. There is the same completeness as regards resources and appliances of all kinds, even X ray, microscopic, and photographic outfits being provided. As before remarked, the general details, including provisions for light and ventilation, for cold storage, ice manufacture, laundrying and sterilizing, bath and closet accommodation, and transfer of the ill and wounded, are practically identical in the two ships.



SIX-INCH GUN CARRIAGE RECOVERED FROM THE "MAINE" AND NOW MOUNTED ON THE "YORKTOWN."

The medical staff of the "Solace" includes four naval surgeons, three naval apothecaries, and thirteen male nurses and attendants; of the "Relief," eight army surgeons and hospital stewards, and sixteen nurses and attendants.

It certainly should be a matter of general pride and congratulation that the United States has thus taken the initiative in inaugurating hospital ships that are true to the title instead of being mere transports,