

# New Cruiser Des Moines Protector of Commerce



MISS ELSIE MACOMBER OF DES MOINES, WHO CHRISTENED THE CRUISER DES MOINES AT FORT RIVER NAVY YARD.

weight of the propelling machinery in the new cruiser by more than one-half. To give the cruiser a bunker capacity for 700 tons of coal, an amount sufficient to carry it three times across the Atlantic ocean without recouling, giving a steaming radius of about 10,000 miles at ten knots or 2,600 miles at full speed, was merely an everyday problem in naval architecture. To burn this coal fast enough it was necessary to provide about 300 square feet of grate surface under the six water tube boilers and to carry away the smoke in two stacks, each rising seventy feet above the grates. The keel of the cruiser was laid at the Fore River yard two years ago, and plate by plate the steel hull rose from the blocks until it looked like a nearly completed ship. A steel hull is not difficult to build in a modern shipyard, when a hundred pneumatic riveters are at work and the dark corners



MISS ALLEN H. CARLETON OF HAVERHILL, MASS., WHO CUT THE CORD THAT LOOSED THE CRUISER DES MOINES.

**B**OSTON, Sept. 20.—(Special Correspondence.)—A radical departure was made from the previous practice of the Navy department when, on March 3, 1899, congress authorized the building of six new cruisers of the Des Moines class which should in every respect be up-to-date and fit for all the requirements of the new American navy. One striking feature, for example, was to be the wooden sheathing and the copper bottom which should cover the steel hulls. For many years Chief Constructor Hichborn stood almost alone in his advocacy of sheathing ships' bottoms; but persistent argument, combined with object lessons from the reports of ships in service, at last overcame the prejudice against it.

So the United States protected cruiser Des Moines which was launched at the yard of the Fore River company this afternoon is typical of a new class of naval vessels in its construction and is equally distinctive in many other respects. It is about the size of Cincinnati and Raleigh, but improved and modernized. These earlier vessels were designed at a time when the craze for speed at all costs reached its maximum, and to attain this speed—which could only be maintained for a few weeks after they were docked and cleaned on account of their rapidly fouling unsheathed bottoms—many other qualities were sacrificed.

In Des Moines it seemed desirable to have a type of cruiser which should be a commerce destroyer, and which should not be too large to follow the flag into the island harbors of the Pacific. For this service a good sea boat was desirable which should show an economy of fuel and a large steaming radius at a reasonable speed, and because such a vessel might spend much of its time in southern harbors, where docking facilities are not obtainable, it was deemed especially necessary to provide the copper bottom to which barnacles and obstructive sea growth would not adhere.

With these requirements and the limit of cost in mind, the Navy department spent some weeks drawing plans, and then began to publish books about the new cruiser. These books contained many thousand specifications, telling in detail how the hull and engines should be built, what sort of material should be used and enumerating everything down to a paper of screws or a whetstone that the builder would be expected to furnish. Hundreds of dollars' worth of paper were required for the plans and hundreds of dollars worth of print sheets were required for the specifications and finally after the various builders had made their bids the contract for Des Moines was given to the Fore River Ship and Engine company—the new yard in Boston harbor—in December of the same year.

The contract called for a cruiser, fore and aft rigged, with two masts and two smokestacks, with a straight bow and an overhanging stern—altogether a boat that without the guns would look not unlike a passenger steamer. With a length on the water line of 292 feet and an extreme breadth of 44 feet, it should have a draft of less than 16 feet, which would let it into many a barlocked harbor, which the deeper war vessel could not enter. The specifications gave the new cruiser twin screws and vertical triple expansion engines, capable of forcing the hull, which it was estimated would have a full load displacement of 3,500 tons, through the water at the rate of sixteen and a half knots an hour, a task which, according to the accepted standard of power, would require the combined efforts of 4,700 horses. Although the earlier Raleigh, for example, was designed for a speed of nineteen knots, it could scarcely maintain a speed of fifteen knots, even with an excessive consumption of coal. While Des Moines is expected to maintain its designated speed practically indefinitely and without an extravagant use of fuel, and, inasmuch as Raleigh required 10,000-horse power, it has been possible to reduce the

of the interior are thoroughly illuminated by portable electric lights, but when it became necessary to cover the lower half of the hull with a sheathing of Georgia pine planks which shall conform so perfectly not only to the lines of the ship but to every little irregularity of the plating that water cannot find its way between the wood and the steel, the task was one requiring much patience and skill.

It is the peculiar quality of copper that it "exfoliates," or scales off, under the action of salt water, and consequently maintains a permanently clean surface, since each exfoliation relieves the ship's bottom of barnacles and other growths which would retard its speed. If the copper could be attached directly to the steel plating the shipbuilder's problem would be a simple one, but if this were done on the bottom of a ship the galvanic action of the sea water upon the copper and steel would soon eat away the steel plates, leaving the copper unsupported. It is therefore necessary to use pine planking as a means of insulation and to take the utmost pains to prevent the sea water from finding its way from the copper sheathing to the steel plating.

Therefore the planks were fastened to Des Moines with the greatest care, and to perfect the insulation 28,000 bronze bolts were used in fastening this sheathing to the steel hull. Further to guard against corrosion, the stem and stern castings are of bronze, the rudder, which is as high as the second story of a house, is made with a bronze frame filled in with white pine and covered with bronze plates, and the propeller wheels, sea cocks and all outboard fittings are of noncorrosive metal.

There is no armor on Des Moines, since it is not intended for work in a pitched battle of naval forces, but it has a protective deck rising from the water line, like the shell of a turtle, with two-inch nickel steel on the slopes which will turn small shot and safeguard to a considerable extent the ship's machinery. The cruiser is expected to stand off vessels of its own size with its powerful armament of rapid-fire guns, all designed for the use of smokeless powder. Its main battery will comprise ten 5-inch breech-loading rapid-fire guns, and its second battery includes eight 6-pounder and two 1-pounder rapid-fire guns, besides four Colt's automatic machine guns, all of which will combine to make it an extremely disagreeable customer at close range.

Being unarmored, its greatest danger is from a shot along the water line, which might cause it to fill and sink. This contingency is guarded against by watertight compartments and a protective belt of cork-pith cellulose. In addition there are about a hundred watertight compartments in the ship, each of which has been carefully tested by pumping it full of water.

(Continued on Fifteenth Page.)

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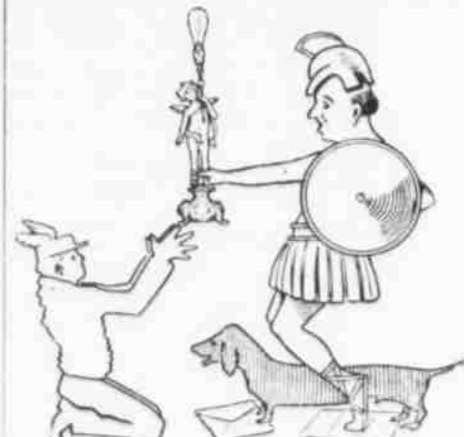
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