

### TORPEDO PRACTICE AT NEWPORT, R. I.

Although torpedo warfare has not yet achieved results at all proportionate to the amount of thought and skill that have been devoted to it, the failure has probably been due more to lack of opportunity or inefficient handling than to any deficiency in the torpedo itself. If we except the abortive attempt of a couple of torpedo boats to get near Admiral Dewey's fleet at Manila, and an equally unsuccessful attack made by one of the Spanish torpedo boat destroyers at San Juan, the torpedo received practically no opportunity during the late war to demonstrate its deadly powers. Whether its moral effect exercised any serious influence on naval operations is open to question. It certainly did not deter our blockading fleet from running in close to the entrance to Santiago harbor during the night. What destructive work was done by the torpedo was wrought upon the enemy by its own weapons, the bow of the "Viscaya" being completely wrecked by the explosion of her forward torpedo room.

At the same time it cannot be said that the events of the war in any way discredited this form of attack or defense, and had the 30-knot destroyers of the Spanish navy been in the hands of American officers and seamen, under similar conditions to those which confronted the Spanish, we think that these little crafts would have given a practical demonstration of their fighting value.

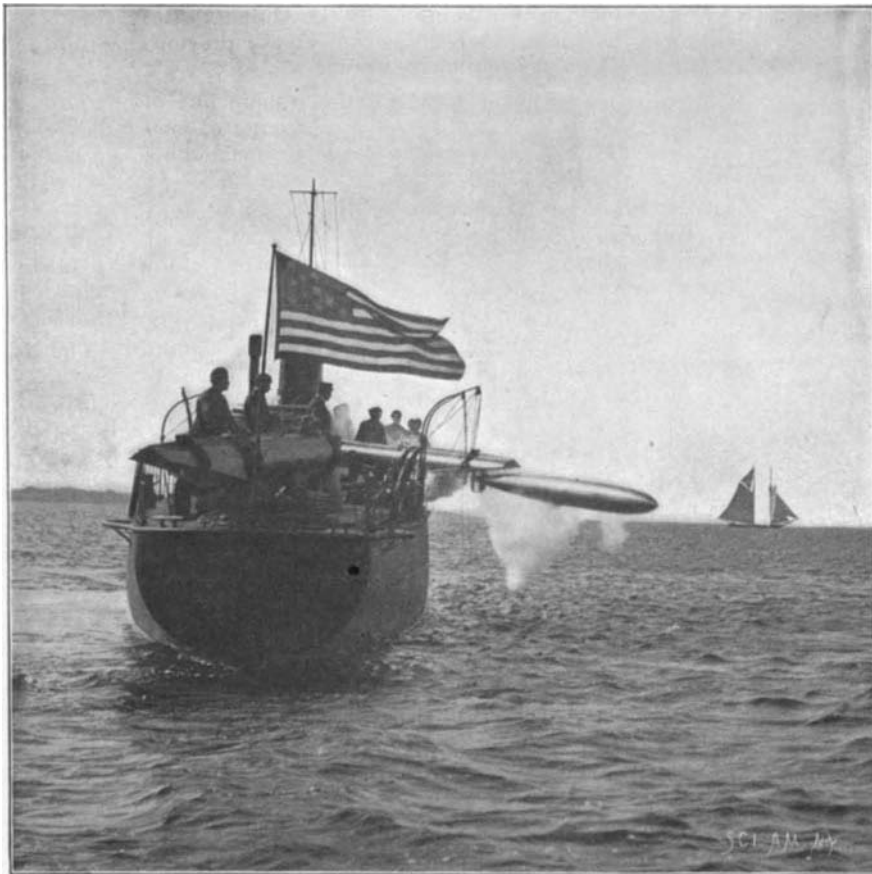
The illustration which we present herewith is one of the best instantaneous photographs of the discharge of a torpedo that has ever come under our notice. The view was taken from astern of the torpedo boat "Morris," just at the instant when she fired an 18-inch Whitehead torpedo from her starboard broadside tube. As most of our readers are aware, a torpedo is nothing more nor less than a small, cigar-shaped submarine vessel, whose interior is divided transversely into six chambers. The first contains a charge of gunpowder, which is fired by percussion fuse. The second, which is known as the "secret chamber," contains the pendulum, piston and springs, which maintain the torpedo at its proper level of submersion. The third chamber is the air reservoir, in which is stored the compressed air for driving the engines. The fourth compartment contains the little three-cylinder engine that propels the torpedo. The fifth is known as the "buoyancy chamber" the object of which is to control the trim of the torpedo by the automatic shifting of a piece of lead ballast. The last compartment, which is

called the bevel-gear chamber, contains the gear by which the propellers are made to rotate in opposite directions.

The torpedo is "launched" by firing it from a gun in the shape of a cylindrical tube, into which the torpedo is thrust from the rear through a breech mechanism, which is approximately similar to that used in artillery. It is ejected by the explosion of a small charge of gunpowder, which compresses the air surrounding

horizontal rudders at the stern and causes the little craft to return towards the surface. The first part of its run is thus made on a wave line which crosses and recrosses the desired and ultimate level of submersion. The piston and the pendulum in the secret chamber gradually bring the torpedo to its true course.

Commonly the United States torpedoes carry three discharges; one on either beam and another astern. The starboard and the astern launching tubes will be noticed in the illustration.



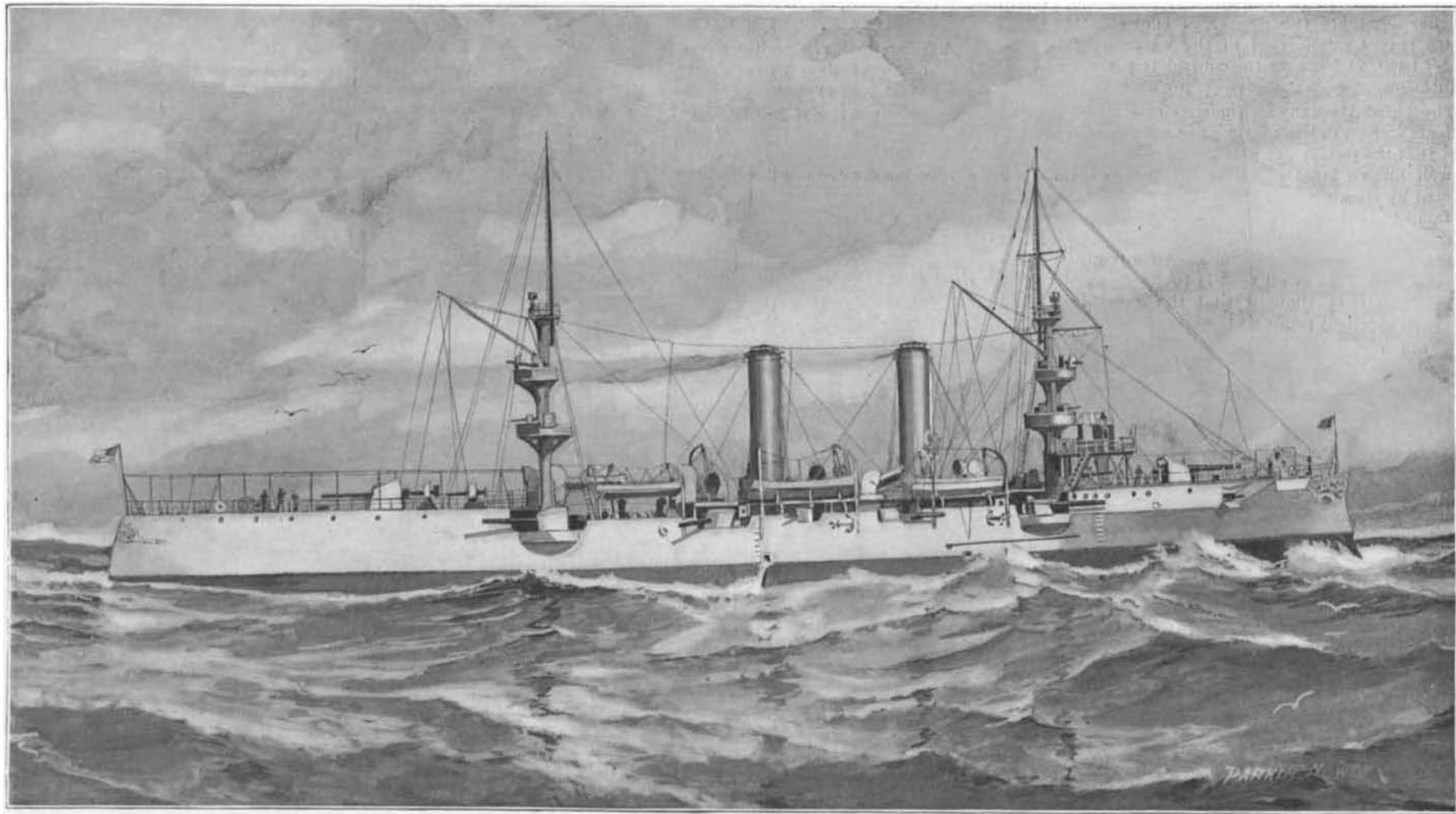
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### TORPEDO PRACTICE AT NEWPORT, R. I.—LAUNCHING AN 18-INCH WHITE-HEAD TORPEDO FROM THE TORPEDO-BOAT "MORRIS."

the rear half of the torpedo and thrusts it out of the tube without any serious jar. As it is driven out a catch on the launching tube serves to open the throttle between the compressed air chamber and the engine; and with her propellers revolving at an enormous speed the little submarine craft takes its dive, as shown in our illustration, into the water. When it first enters, the torpedo falls below the normal plane at which it is designed to travel, but the action of the pendulum in the secret chamber throws up a pair of

South American republic would have been absolutely unendurable for the men of the American navy. An improved system of ventilation has been installed, the officers' quarters have been rearranged and enlarged, and additional berthing space has been provided for the crew. Considerable alterations have also been made in the dynamo room. These modifications have been carried through without in any way impairing the fighting efficiency of the vessel.

The "Albany" was launched at Newcastle, January



### THE ENGLISH-BUILT PROTECTED CRUISER "ALBANY," SOON TO ARRIVE IN THIS COUNTRY.

**Displacement,** 3,700 tons. **Speed,** 20.73 knots. **Maximum Coal Supply,** 800 tons. **Complement,** 365. **Armor:** Protective deck, 1 1/4 inches on flat, 3 inches on slopes; shields, 4 inches. **Armament:** Main battery, six 6-inch rapid-fire, four 4.7-inch rapid-fire; secondary battery, ten 6-pounders, eight 1-pounders, two Colts. **Date,** 1899.