TORPEDO VESSELS

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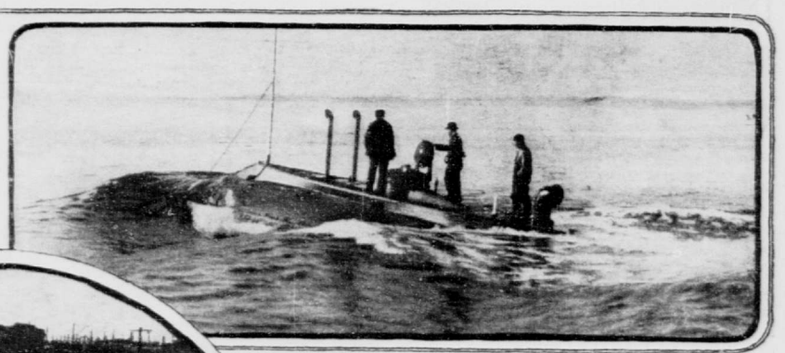
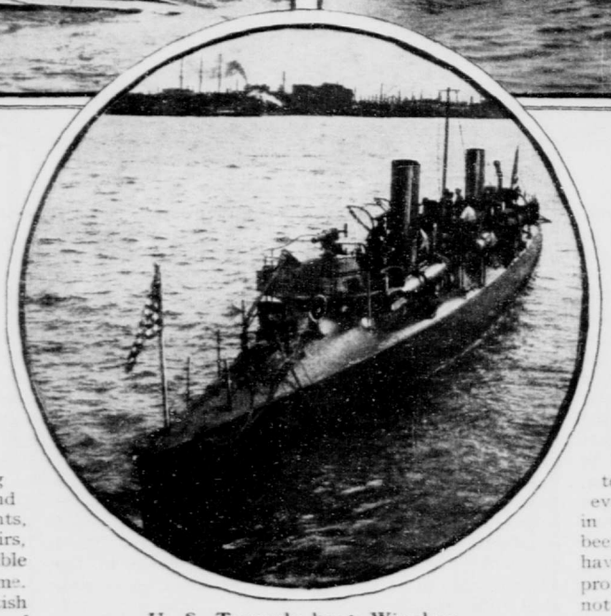
The Torpedo-boat Adder Under Way



Trial of the Fulton at Greenport



U. S. Torpedo-boat Winslow

WILLIAM LAIRD CLOWES, in a prize essay on torpedo-boats published in the "United States Naval Institute Proceedings" (1892) states the following: "The designed purpose and the legitimate duty of the torpedo-boat is 'to strike like a bolt from the blue' in the most unexpected quarters, always to be in perfect readiness for a few hours of rough, hard work, under extreme pressure."

All torpedo vessels should have great speed and maneuvering power. In attempting to secure this in the past, experience indicated that everything was made too light. Neither hulls, boilers nor engines were made sufficiently strong to withstand adverse conditions of service and sea. They always were meeting with accidents, which required their being put up for repairs, so frequently that they were not fully available for service except for a limited length of time.

This is shown in an extract from a report on British naval maneuvers: In the British naval maneuvers of 1885 twenty-five torpedo-boats took part. That part of the report which concerns these boats states that about half of these became disabled on the passage from their home ports to the scenes of the operations. A great action was planned in which these boats were to have a prominent part in the attack. The report of the attack says that these torpedo-boats seemed to be uncontrollable; many collisions occurred, machinery mishaps, and breakdowns of disabling nature were more than frequent, and when the order for the attack was given few of the twenty-five boats could take part. The judges reported their opinion of these torpedo-boats to be that in their condition and as they were handled the torpedo-boats could not have succeeded in any attack.

Two torpedo destroyers were built recently with the Parson turbines as propellors. They attained a speed of about forty miles. Both were lost in rough weather, owing, chiefly, it is thought, to the hulls being too light for the powerful engines carried. These last indicated ten thousand horse-power on a vessel of three hundred seventy tons' displacement. The system has the advantage of this great power being distributed to a greater number of shafts and propellors.

These "Microbes of the Sea," as a French author happily calls them, require great power to attain the high speeds which are sought. As it is desirable to have the weights of the engines and boilers as small as possible, it has been found that they were made too slight. The British recently launched the Erne, a torpedo-boat destroyer of five hundred forty tons, requiring seven thousand horse-power to secure a speed of twenty-five and one-half knots. French torpedo-boat destroyers of three hundred three tons make twenty-eight knots with six thousand horse-power.

For higher speed, these little vessels require a greater horse-power than is possessed by many of the older battle ships.

In consequence of these conditions, there is not much capacity for carrying fuel, nor commodious quarters for the crews. The slight vessels, when under way, are in a state of high vibration. The crews are in a condition of tension, working to their utmost, and rest is not secured easily. They are likely to succumb to these unfavorable conditions, and when the time arrives for the work for which the torpedo-boats were created especially and the crews trained, they are likely to be unfitted for the trying ordeal, and failures ensue.

An extract from a parliamentary report on the British naval maneuvers states as follows: "The radius of action of a torpedo-boat is limited less by her coal and feed-water supply than by the physical endurance of her crew, especially her Commander."

In consequence of the foregoing, to provide better accommodation for the crews, to enable them to better keep the sea and also increase their radius of action, the size of the torpedo-boats has been increased until torpedo ships, or cruisers, as large as fourteen hundred tons have been created.

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The general classification, differing at different periods and nations, is about as follows:

Torpedo gunboats or cruisers, from eight hundred to thirteen hundred tons; torpedo-boat destroyers, from two hundred to five hundred fifty tons; first-class torpedo-boats, eighty-five to one hundred seventy tons; second-class torpedo-boats, fifty to eighty tons; third-class torpedo-boats, twenty-seven to forty-five tons.

The smallest class is suitable only for harbor use. The torpedo-boat destroyer class now is built sea-going and the accommodations for the crew are fairly good. A fleet of five United States torpedo-boat destroyers recently made the trip from the United States to Manila with ordinarily fair comfort to the crews, and with no necessity for repairs, beyond minor ones, which were performed by its own staff of engineers and machinists.

Destroyers and first-class torpedo-boats have three deck torpedo-tubes, which are pivoted so that they can swing through the entire circle. Second and third-class torpedo-boats usually have one tube; but no recently built torpedo-boats have tubes which discharge the torpedoes directly under water. Cruisers and battle ships at one time were provided with torpedo-tubes above and below the water-line, but the former have been abolished.

There was much prejudice against having any torpedo-tubes on battle ships and large cruisers and even the under-water tubes were tabooed, especially in the United States. This prejudice recently has been overcome, and all battle ships now being built will have the under-water tubes installed. It also is proposed to place them on some of the battle ships not having such provided in their original construction.

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Protection from attack by torpedo-boats is provided as follows:

Torpedo netting, a crinoline of strong wire netting which was suspended from booms about twenty-seven feet long, holding the netting from the ship's side, so as either to catch and hold the torpedo off altogether, or cause the explosion to take place sufficiently far away from the sides to prevent injury.

This method involved the use of considerable impedimenta, in the way of booms, etc., and could not be used well with the ship in motion. It could be circumvented by firing two or more torpedoes successively. The explosion of the first was to break the netting, leaving the way clear for the succeeding ones. There also were torpedoes carrying wire-cutting devices called "net-cutters."

Defense nets now are practically abandoned, and reliance is placed chiefly upon the search-lights and vigilance of the crews, seconded by numerous quick-firing guns. Search-lights are installed on all war vessels to detect the approach of torpedo-boats at night.

Experiments made with search-lights from the United States cruiser Nashville indicate that the torpedo-boats were detected on dark nights at an average distance of seven hundred eighty-one yards. On bright, moonlight nights the search-lights were not so efficient, torpedo-boats being able to approach even nearer without being detected. If they can dodge outside of the beams of the search-lights they can run undetected in the dark areas more easily, because of the contrast with the bright beams of light.

The quick-firing guns are expected to destroy the torpedo-boats before they can approach near enough to fire their torpedoes; but with the improved range and accuracy of fire of the latest torpedoes, the distance from which a torpedo may be discharged successfully may be considerably greater, so that the discharge can be made before the approach of the torpedo-boat has been detected by the search-lights.

It is proposed to have each battle ship provided with at least two torpedo-boat destroyers as outposts, to detect in ample time the approach of the enemy's torpedo-boats and destroy them. Search-lights playing from advanced

The French Submarine Boat Gymnote