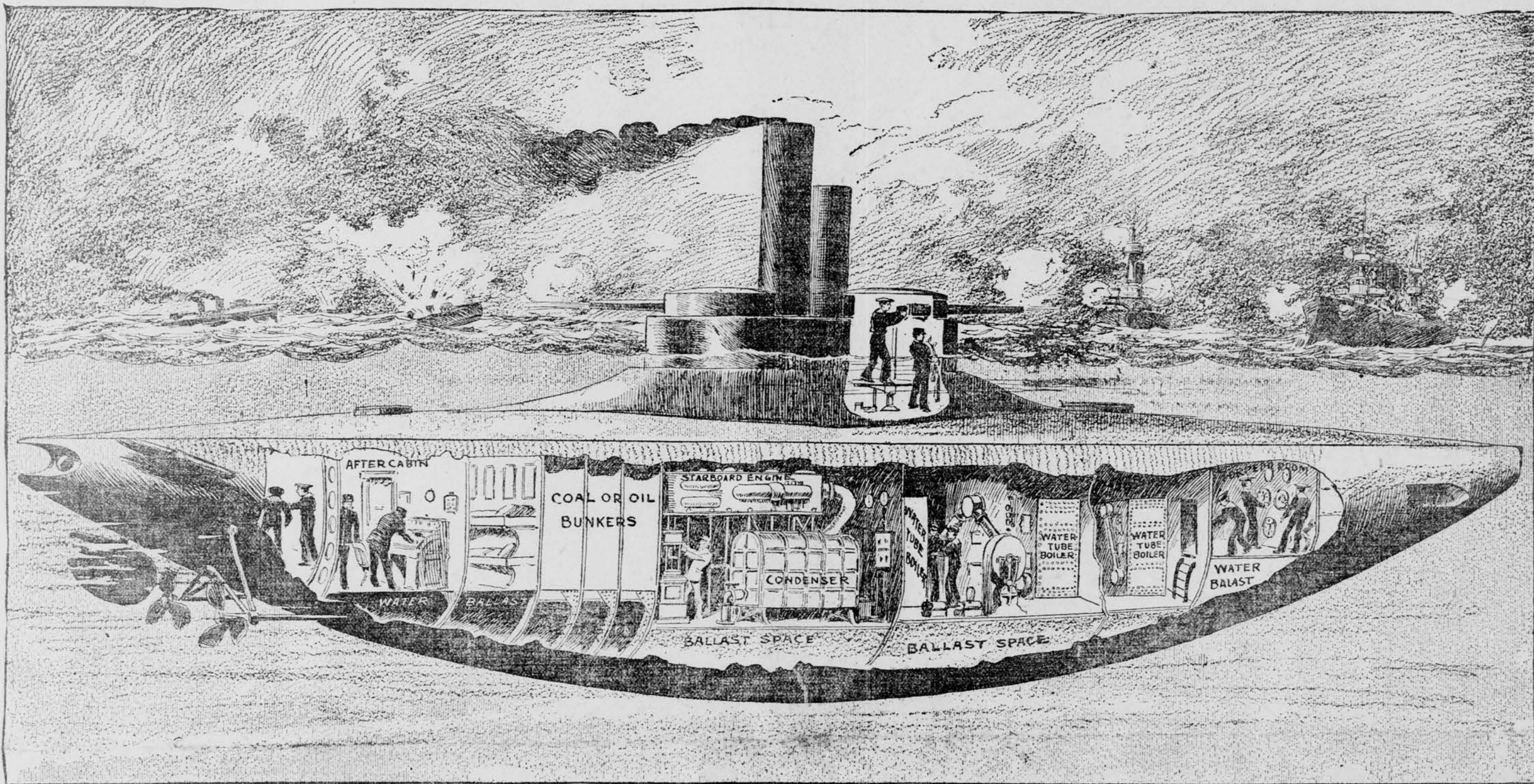


THE LATEST NAVAL WONDERS FOR DESTROYING BATTLE-SHIPS



INVENTOR HOLLAND'S PROPOSED NEW SEMI-SUBMERGED TORPEDO BOAT.

This new marine fighter will be protected by being sunk four feet under the surface of the water. The small exposed portion will be surrounded with the kind of armor used by cruisers. Inventor Holland declares that such a vessel will be practically irresistible and invulnerable because she will combine all the qualities of a torpedo boat and a torpedo boat destroyer, and can also be used as a destroyer of torpedo boat destroyers.

INVENTOR HOLLAND'S TWO NEW SEA FIGHTING MONSTERS, THE SUBMARINE TORPEDO BOAT AND THE SEMI-SUBMARINE TORPEDO BOAT.

INVENTOR HOLLAND has just come to the front with another marine wonder; he calls it a semi-submerged torpedo-boat. It is a vessel designed to stand up and fight the enemy in an interchange of heavy blows. Its fighting equipment and make-up is, therefore, somewhat different from his submarine torpedo-boat. This new craft does not wholly disappear under the surface of the water, but is only semi-submerged, just enough for what is considered safety in a fierce sea fight.

In both his boats Mr. Holland's idea has been to have sufficient protection to get within striking distance of an enemy's ship. In the submarine boat this idea is carried out by making an attack from beneath the water, where she is safe, because unseen. In the semi-submerged torpedo-boat part of the vessel is protected by being sunk four feet under the water. The small exposed portion is surrounded with armor at least as heavy as that on the armored cruisers of the present day.

President W. H. Jacques of the Holland Torpedo-boat Company describes the new semi-submerged torpedo-boat as follows:

"We all know how difficult it is to adequately protect a ship with armor even by a most careful distribution of weights. The semi-submerged boat presents a type in which you can armor such parts as are necessary, employing very heavy armor, because you have reduced to a minimum the parts exposed, and, possessing submarine qualities, it is the only kind of a boat that will do this, as you well know there is not a torpedo-boat in existence to-day that will meet these conditions.

"In such a craft you can get close up to your ship and fire the torpedo into her, while an ordinary torpedo-

boat will be simply riddled and sawed into pieces by rapid-fire ammunition. Further, a submerged armored torpedo-boat will be able to get so near her target that by greatly reducing the range she will eliminate many disadvantages of the present long ranges required for the Whitehead torpedo. Again, you are giving a well-disciplined crew a chance to do something, for their quarters will be infinitely more comfortable than those they at present occupy in the torpedo-boat. They will have a feeling of safety which they do not now enjoy, and they will know that they will land their torpedo close enough to blow up the ship.

"Such a craft may be compared with a large automobile torpedo, one of sufficient size to carry a crew and yet possessing not only similar automatic devices for controlling the position, but having them supplemented by direct mechanical ones under the direct control of the brain of man.

"Such a boat will be practically irresistible and invulnerable; will even resist the attack of heavy ordnance, and is a type that it will be impossible to avoid."

Inventor Holland proposes to build one of these all-around fighting submarine machines as follows: A vessel 220 feet long, 24 feet wide and drawing 14 feet of water. Its displacement will be 1000 tons; the engines will have 10,000 or 12,000 horsepower and develop a speed of twenty-five knots. The armored superstructure to protect the smokestacks and companionway is to be between 30 and 40 feet long and 10 feet wide in the middle, the ends being made half round. The armor will consist of four large rapid-fire guns of 10 or 12 pound caliber, in revolving turrets. The armor will be as heavy as the vessel can carry, but not less than 12 inches. When light the superstructure will be only 15 inches above water in the middle; in action it will be covered by 4 feet of water, and the guns will be but 5 feet above the water line.

Such a boat as this combines all the qualities of a torpedo-boat and a torpedo-boat destroyer, and can also be used as a destroyer of torpedo boat destroyers. Not only this, but it can move fearlessly right up within easy torpedo range of a line of battle-ships, which can only train their rapid-fire guns upon the little craft, and the projectiles from such guns will strike harmlessly upon the heavily armored superstructure, if they could hit so small a target as the vessel exposes when in action.

THE news which comes from New York of the successful trials made by the Holland submarine boat has set men considering seriously the possibility of using this terrible weapon of offense in the war which now seems inevitable.

Naval experts of course are divided on the question, they always are whenever any new instrument of destruction is introduced. The more conservative shake their heads gravely and dwell on the many limitations which natural law imposes on submarine navigation; the younger and more enthusiastic members of the profession make light of these difficulties and claim that we have here a weapon which, in deadly effect, will outrival even the torpedo. And we know from sad experience what terrible destruction can be wrought by even one torpedo or submarine mine.

As a matter of fact, we are all in the dark as yet as to what may or may not be accomplished by a submarine torpedo boat. We know little enough about the behavior in real warfare of vessels which maneuver on the surface, and it remains to be seen what those moving in the depths will achieve. All we know, so far, is that the Holland boat has proved herself able to travel for several

miles under the water, to rise and sink at the will of her operators, and to discharge a torpedo at a target. She presents no target at which an enemy's quick-firing guns can aim; she is practically invulnerable, and naval science has not yet devised a means of defense against her attacks. So that if any Spanish vessels come within her range she may, under favorable circumstances, revenge the loss of the Maine.

The Holland boat was tried at Perth Amboy, N. J., last month, and subjected to four severe tests. While running full speed she was submerged by simply filling her tanks, reappearing gradually after traveling some distance under water. In addition to her capacity for submarine work, the Holland can make a good fight on the surface. She can fire an aerial torpedo containing 100 pounds of gun cotton for a distance of a mile. Also she is supplied with three 18-inch Whitehead torpedoes, fired from a tube under water. Further, there is a submarine gun at the stern, designed to fire a projectile five hundred yards through the water. When on the surface she is propelled by gasoline engines, when below electric storage batteries do the work. Horizontal rudders regulate the depth to which the boat is sunk, but to be kept under water she must be constantly moving. The boat is 55 feet long by 11 feet in diameter, and it is claimed that she can run for fifty miles without coming to the surface for breath.

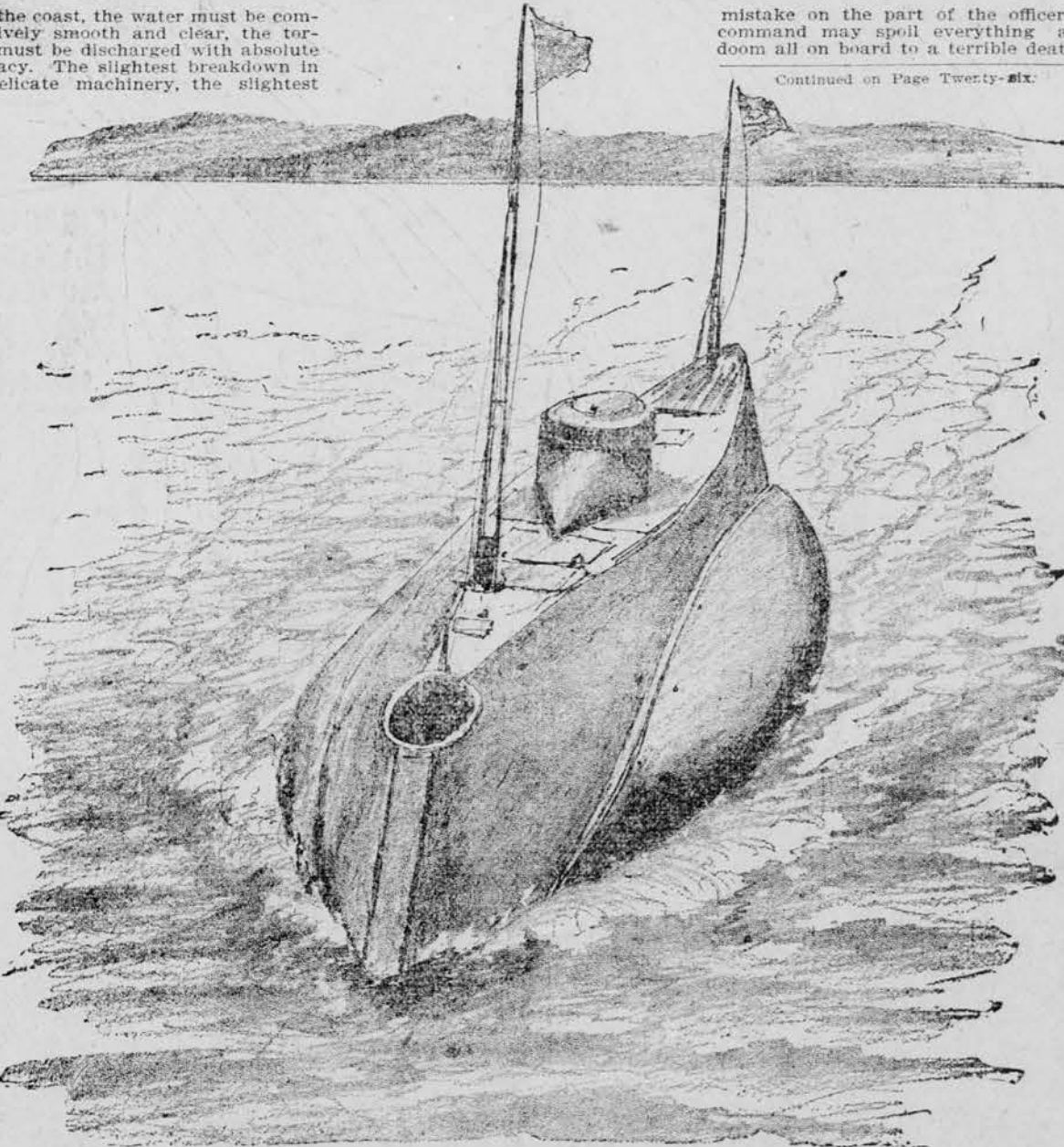
So far, the Holland boat promises well; but the main question is, Will the conditions favorable for the use of a submarine vessel ever occur in real action?

That is the whole point. The world, or at least that portion of it which is looking anxiously forward to the American-Spanish conflict as a means of solving many unsolved problems in naval construction, watches with interest for the first real trial of the boat. A trial under merely peace conditions does not count. The enemy must be at anchor and at not too great a distance

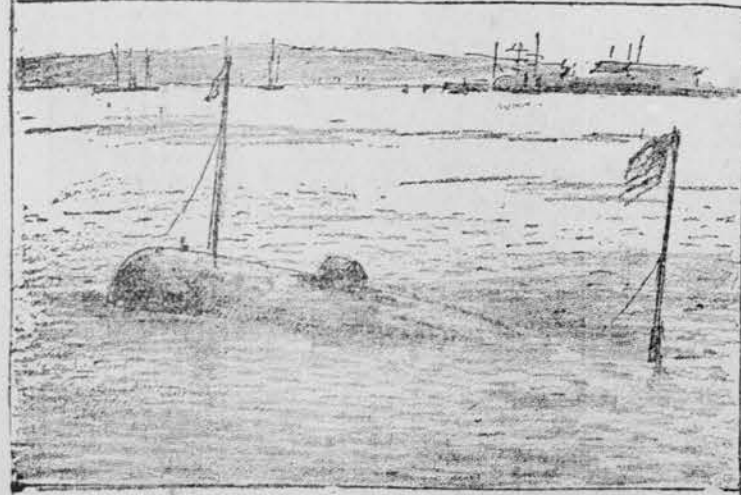
from the coast, the water must be comparatively smooth and clear, the torpedo must be discharged with absolute accuracy. The slightest breakdown in the delicate machinery, the slightest

mistake on the part of the officer in command may spoil everything and doom all on board to a terrible death.

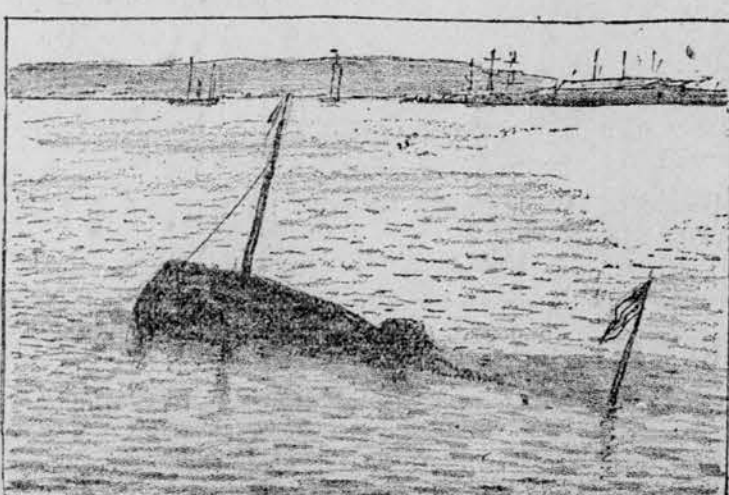
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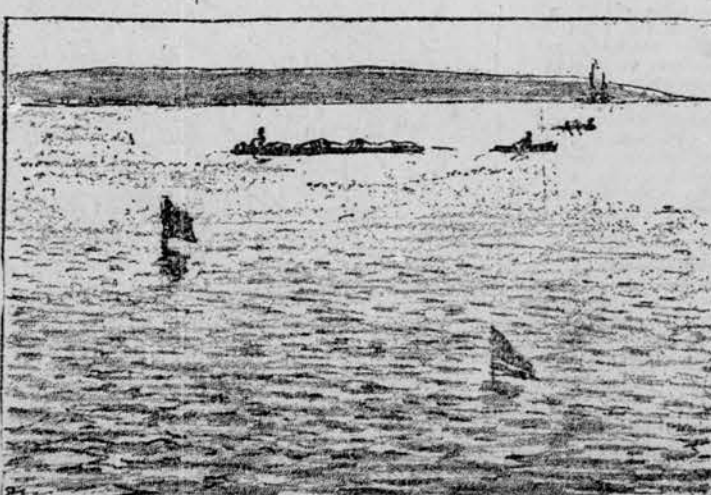
NEW SUBMARINE BOAT HOLLAND AS SHE APPEARS ON THE SURFACE OF THE WATER. Sketched from a Photograph.



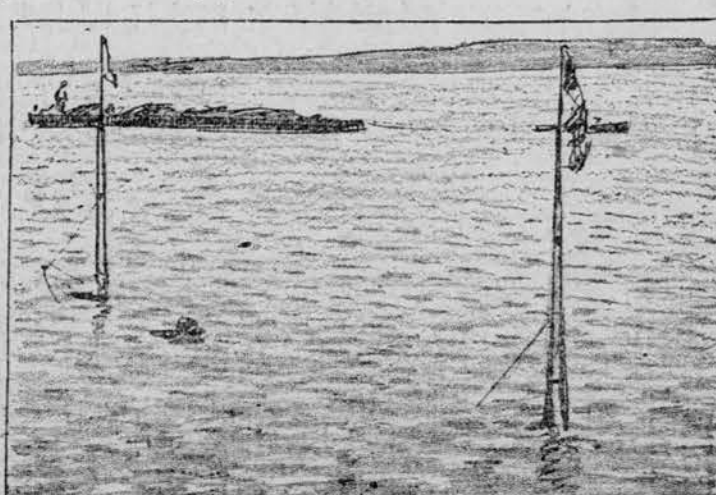
THE SUBMARINE TORPEDO-BOAT BEGINNING THE DIVE.



A LITTLE DEEPER.



ALL UNDER WATER; ONLY THE TIPS OF THE FLAGS SHOWING.



COMING UP AFTER THE DIVE.