

HOLLAND'S TORPEDO BOAT.

CAPABLE OF RUNNING UNDER WATER FOR HOURS.

INVISIBILITY ADDS GREATLY TO HER AGGRESSIVE POWER—CHANGES OF PLAN.

Now that the Holland has been purchased by the Government, and is a vessel of Uncle Sam's Navy in good and regular standing, a fresh interest is taken in her history and characteristics. This particular craft was built by a private corporation. The designer had previously induced the Navy Department to adopt another of his plans, and the construction of a boat of the same unique character was undertaken at Baltimore, the Government having let the contract to a well known firm of shipbuilders in that city. For various reasons, however, that boat—the Plunger—has never been finished. When Mr. Holland projected the later boat, which bears his own name and which was constructed at Elizabethport, he thought he saw several ways in which he could improve on his original design. The Holland, for instance, is much shorter than the Plunger, and hence can change her course more quickly. This possibility gives her a great tactical advantage.

The Holland is shaped like a sweet potato, is 53 feet 4 inches long and 10 feet 3 inches in diameter at the broadest part. When cruising about one-eighth of her bulk would be above the surface, and she would draw about eight feet of water. She can be wholly submerged and yet operate in a depth of twelve feet.

Propulsion is effected by a screw that derives its power from a gasoline engine when the boat is running at the surface. When she is submerged the screw is driven by an electric motor and storage battery. This battery would be previously charged by the boat's own engines. One charge of the battery ought to enable her to run seventy-five miles under water. When submerged her speed would not exceed four or five knots. When cruising she can travel a little faster. She has made a speed of seven or eight knots on the surface.

Besides the ordinary rudder, a vertical plane to direct the boat's course to the right or left, the Holland has a second one, extending in a horizontal plane, and intended to alter the level at which she runs. Tilting this horizontal rudder downward depresses the bow of the boat, and lifting it slightly tends to bring her to the surface again.

On top of the vessel, amidships, is a telescopic tube twenty inches in interior diameter, and capable of being raised from a height of eight inches to one of thirty. The opening at the upper end, by which entrance to the interior is effected, is closed by a hinged door that can be made water tight. This tubular device is the "conning tower," through which the pilot makes his observations. When the boat is about to run below the surface the tower is contracted, the trap door is closed, the opening through which the products of combustion in the engine escape is shut, and the engine is itself thrown out of service. After the craft has been entirely submerged the pilot relies mainly on his compass, but comes to the surface at intervals for fresh observations. He can get his bearings within a few seconds, and then dive before being detected. For breathing while the boat is under water, the men are supplied with compressed air.

As originally designed, the Holland had three weapons. One was an expulsion tube of the same type that the ordinary torpedo boat carries. This delivers the torpedo without any special violence. The Whitehead projectile is

an automobile, or self-propelling, affair. It carries a tiny screw and automatic steering apparatus, and takes care of itself when once launched. The Holland is planned to carry three Whiteheads twelve feet long and eight-

teen inches in diameter. One would be placed in the expulsion tube ready for service, and the others would be arranged alongside the tube within the boat. The tube opens out in front.

The boat also had what was called an "aerial gun." This was built into the frame of the craft, and opened forward above the torpedo tube. It had an upward slant, too. Its object was to hurl into the air a projectile con-

powder, a torpedo devoid of means of self-propulsion. This was called a submarine gun. Experience with the Vesuvius, by revealing the difficulties of aiming a fixed gun, has led experts to believe that the Holland's aerial and submarine guns will be practically useless. It is not improbable that they will be abandoned, and the Whitehead torpedo tube made the sole offensive feature of the armament.

The chief virtue of a submarine torpedo boat is that she can render herself more completely invisible than a vessel that always stays on the surface. She could certainly deliver an attack by night without detection, and it is even possible that she could do so by day. The latter is altogether out of the question with any other type of torpedo boat. Of course, such tiny craft cannot navigate in rough water. They are fitted to live and work only in or near harbors. They require special skill and courage on the part of officers and crew. But they can do what no other torpedo boat can, and have a distinct field of usefulness before them. An officer of the United States Navy who closely observed the tests of the Holland about a year ago evinced great faith in her possibilities in the right hands.

PUNISHED FOR NOT SALUTING.

A MERCHANT SHIP CAPTAIN'S EXPERIENCE WITH THE GERMAN EMPEROR.

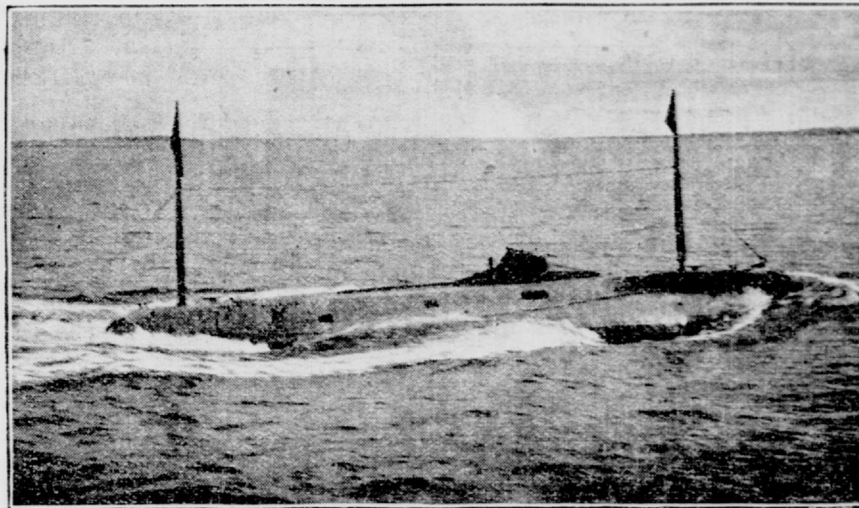
From The London Post.

Our readers are acquainted with the circumstances of the dismissal of Captain Spence from the employment of James Currie & Co., after ten years' blameless service. The former shipmaster was piloting the North Star through a difficult channel in the Weser when he met a German warship entering the river before the wind. A northwesterly gale was blowing in his teeth, and just as he had negotiated the corner with sufficient room to pass in safety Captain Spence noticed that the German vessel was flying the imperial standard. His anxious navigation and the fact that the flag had been clinging around the mast had prevented him from observing it before; and, most unfortunately and to his own deep regret, he was too late in returning the salute. The warship, with the German Emperor on board, was rapidly passing out of sight when the law of courtesy was satisfied. The shipmaster lost his place in consequence, and he acquiesced in the justice of the penalty which was the inevitable result of the correspondence that had passed between his employers and the German Embassy in London.

But the story has a gratifying sequel. As Captain Spence informed us the other day, he addressed a letter to the Emperor in which he gave a plain account of the facts and expressed his sincere concern for the inadvertence. It is extremely pleasant to learn that the Emperor William, who is himself a sailor, has been graciously pleased to accord a sympathetic ear to the apology. In a letter which has reached Messrs. Currie from the German Minister Plenipotentiary in London, Count Metternich is directed by his Government to transmit His Majesty's best thanks, and to inform them at the same time that His Majesty "would feel sorry if Captain Spence would lose his living." This act of royal generosity does credit to the Emperor's heart no less than to his unfailing good sense. Captain Spence was guilty of a grave breach of international custom at sea. His ship was saluted by a foreign Power as well as by a foreign sovereign, and he did not return the salute. But grave as the omission was, it was capable of explanation and excuse, and the delinquent's previous record was a proof of his innocence in intention. We are glad that this view of the circumstances has prevailed with His Imperial Majesty, who will have added by his graceful act at least one more enthusiast to his many admirers in Great Britain. Captain Spence's reinstatement is assured, and he will owe it directly to the Emperor.



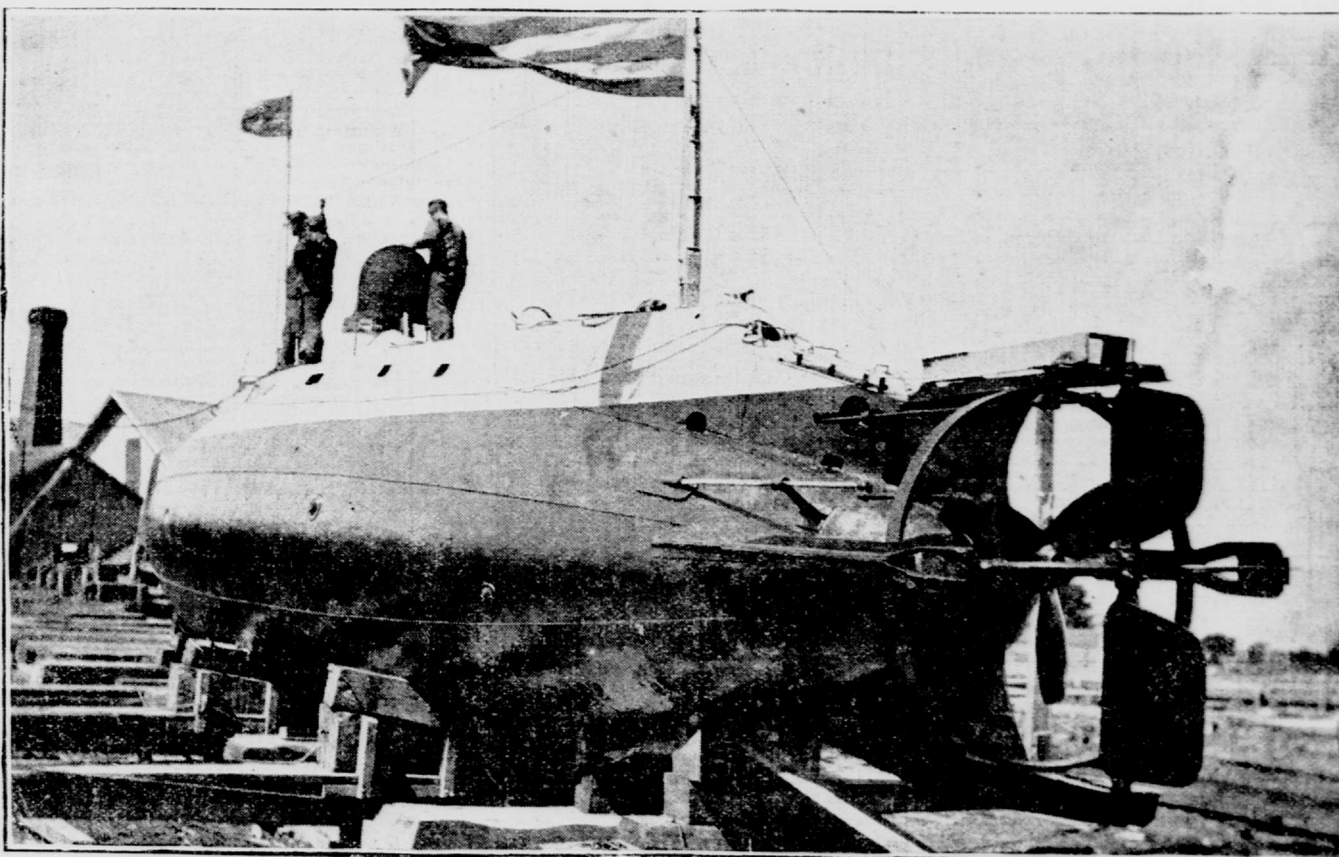
THE HOLLAND SUBMARINE BOAT.
Recently purchased by the United States Government.



THE HOLLAND BOAT RUNNING ON THE SURFACE AT EIGHT KNOTS AN HOUR.

teen inches in diameter. One would be placed in the expulsion tube ready for service, and the others would be arranged alongside the tube within the boat. The tube opens out in front.

taining high explosives. Then there was a somewhat similar gun, pointing aft and submerged, so as to send through the water, with force derived from a considerable charge of



STERN VIEW OF THE HOLLAND SUBMARINE BOAT.