

# To Europe in a Submarine Boat

(Copyright, 1900, by P. Latzke.)

Preparations are making for the most interesting event in ocean travel since the first steamship crossed the Atlantic. A submarine boat is to be sent from America to Europe under her own power. She is the invention of John P. Holland, whose submarine torpedo boat Holland, now the property of the United States government, figured extensively in the recent naval maneuvers at Newport and is known for the present as "No. 7." She is now fitting out at Nixon's shipyard in Elizabethport, N. J., for the transatlantic journey. For some years now submarine boats have pattered about the harbors both in this country and in Europe. But they have never ventured far from the coast. A boat of this type built by Nordenskiöld made a journey of 150 miles along shore on one occasion and this has been the long distance record. A tour of great oceans in a submarine vessel, it has been generally supposed, would always remain a dream of Jules Verne.

The inventor of the Holland torpedo boat has now determined to make this dream a reality. His new boat will go to Bermuda, thence to the Fayal islands, then to Lisbon, in Portugal. This is a trip of 3,000

miles; New York to Bermuda, 676 miles; Bermuda to Fayal, 1880 miles, and Fayal to Lisbon, 940 miles. Just when the trip will be made is not definitely determined upon, but it will probably be some time in February. The boat will wait for propitious weather. To speak of waiting for propitious weather in February sounds like an absurdity, and in the case of ordinary craft it would be, but what Mr. Holland's diver is looking for is storm, high wind and a heavy sea. A smooth sea and the absence of storm signs will be the signal for the postponement of the voyage. For this journey is to test once for all the capacity of the submarine to care for herself on a long trip under the most unfavorable conditions.

## How the Submarine Boat Will Travel.

To the lay mind such a journey will seem to smack decidedly of foolhardiness. To the minds of the men who are to travel in the "submarine" the proposed journey ranks with a trip on the Kaiser Wilhelm or the Deutschland. They admit they will go slower, but that is all. The voyage to Lisbon is to take sixteen days. No. 7 will travel all the way under her own power. Her speed will be approximately nine and a half knots for the entire voyage. She will not travel at the bottom of the sea as did Verne's fantastic craft. Most of the way she will go on the surface. Occasionally, however, she will go under, and remain for thirty or forty miles, at a depth varying from thirty to sixty feet. Her inventor claims for her that she can safely go 400 feet beneath the surface and maintain herself there, resisting successfully the terrific pressure of the water. No such depths will be attempted on this trip, however, and except for purposes of scientific investigation or explorations for sunken vessels no object would be gained by diving very deep. At thirty feet beneath the surface the craft is as secure against discovery as if she were a hundred times as far down and can pass safely beneath the keel of the greatest of ocean liners. Now and then in shallow places she will touch bottom just to show that she can, and to see what she will find.

The plans for the voyage have been very carefully and thoroughly laid out and no fear of failure is entertained. The trip is taken for a two-fold purpose. It is to demonstrate, in the first place, the fallacy of the opinion still entertained in naval quarters that submarine boats cannot sustain themselves far away from a base of operation, that they are useless as offensive weapons against a country on the other side of the sea, and that their mission, if they have any at all, is for coast defense merely. The second object of the trip is to present the boat in foreign harbors to foreign governments.

Mr. Holland has the utmost confidence

in the ability of No. 7 to make the trip to Europe in safety. He himself will be in command. Including the inventor there will be eight men aboard the little craft. Their quarters will be pretty close, but they feel certain that they will not be too close for comfort. Whenever the possibility has been discussed of navigating a "submarine" for a long distance it has always been asserted that it would be impossible for a crew to stand the confinement. The voyage to Lisbon is expected to determine this matter. As the projected trip is a first experiment, an extra crew will be carried in a tender that is to convey No. 7 to guarantee the men against actual hardships. This tender will be a small tramp ship. She will keep her little consort constantly in sight if possible, so long as the latter remains on the surface. But as the stormiest period of the year is to be selected for the journey, it is more than possible that the two vessels will part company long before the end of the game. It is a pretty difficult thing to keep in sight such a small speck as No. 7 will present when the sea is high and the wind is battering the convoy about.

ward to handle even under the most favorable conditions, and it has been so loaded down inside with clumsy machinery and appliances that there is scarcely room to get about in it. No. 7, though about twenty feet shorter, has fully three times as much room.

A unique arrangement has been introduced in No. 7 for handling the water ballast, a particularly important element in submarines. Nearly a ton of water can be ejected from the ballast tanks in three seconds as it is rising, thus allowing its turret to project above the water for the purpose of observing the enemy. Almost at the same instant the tank is again filled from the outside so that it pops up and then down again with incredible rapidity, giving its captain in the turret just time enough to get a full view of whatever may be on the surface, and the enemy no time to sight its guns and fire.

The most striking quality possessed by No. 7, according to shipbuilders, is that she can operate at will in fresh water as well as in salt. This no other submarine has ever been able to do. She can pass from the ocean into a river and dive freely in either. And what is considered even more remarkable she can operate with equal freedom at the point where the fresh and salt water mingle. This property is due to a new arrangement of water ballast that enables her to overcome the difficulties presented in diving where the specific gravity of water changes, as it does from ocean to river or the reverse. The value of this property in war is not hard to appreciate. It gives the new boat a much larger field of operation in such harbors as New York, where the Hudson becomes fresh a few miles up from Manhattan island. The Holland was severely handicapped by the lack of this ability and her failure to meet the approval of the board of inspection at a trial on April 29, 1898, was largely ascribed to the absence of the fresh and salt water navigating qualities.

**Lauching and Christening.**

Throughout this article the new boat has been referred to as No. 7. This is at present her official designation, she being the seventh vessel built by Mr. Holland, counting from the very beginning. Before she casts loose on her great trip across seas the little vessel is to be formally christened. She will probably be called the Bushnell, in honor of the man who operated the first submarine in America. The boat will be in shipshape by the end of this month. It is the intention, then to take her for a series of trial trips up and down the coast. Everything about her will be thoroughly tested before the long journey is begun. If she proves as satisfactory and seaworthy as her builders expect, the final preparations will be made as soon as foul weather comes. Mr. Holland says it will please him best if he can cast loose in the teeth of a raging storm. He has such absolute confidence in the little craft that he is eager to jump into the most difficult conditions at the very outset. The start will be made from the Holland company's yards in Bayonne.

The boat has been very quietly built by the Holland company. Few persons outside of those immediately concerned with its building have known that it was going forward on the stocks of the Elizabethport shipyard. This secrecy was practiced because it was not known what action the government might want to take with regard to it. It was thought that the United States might want to control the building of all ships under the Holland patents and in that case it was desirable that the details of the construction of No. 7 should not become public property before its launching. The government, however, decided recently that nothing was to be gained by controlling the designs, as foreign patents on all the details have been received by the inventor. Necessarily the papers on which the patents were issued by foreign countries gave a complete description of every new device employed in No. 7. When this fact was made plain the United States government contented

itself with ordering six of the new boats. The necessity for secrecy is therefore now done away with.

## Navy to Have Fleet of Submarines.

The six boats building for the government are patterned exactly on the lines of No. 7. Four are to be constructed at Nixon's shipyards and two at the Union Iron works in San Francisco. They are to cost \$175,000 each. The Holland company has sub-contracted for their construction and it is one of the peculiarities of the transaction that at this time no one knows exactly what their building is going to cost. The profits of Mr. Holland and his associates in the deal cannot be measured until at least two of the craft are finished. It may be \$50,000 that they make on each boat or it may be only \$10,000 or even less. The experience of building the other boat, furnishes no guide in the matter, as heretofore there has been much experimental work. It is only now that the experiments may be said to have been completed.

Mr. Holland's success as a builder of submarine craft has not come without long years of apparently fruitless endeavor. Twenty-five years ago he submitted to the Navy department plans for a submarine torpedo boat to be operated by one man. Secretary of the Navy Robeson referred the matter to the naval officer in command at Newport in 1875, who reported that a vessel of that type was impracticable, first, because it would be impossible to get any man to operate it; and second, because it could not be directed under the water. The plan for that one-man boat, which seemed to the naval men of that time an impracticable dream, was the prototype of the submarine No. 7, in which Mr. Holland will soon sail for Europe.

## Stories About Preachers

An American minister who recently visited Ireland says he heard a preacher conclude his sermon with these words: "My brethren, let not this world rob you of a peace which it can neither give you or take away."

One of the laity approached Father Moriarty of St. Agnes' church, South Omaha, and sought gently to break the news of a prospective division of his parish. "I understand," said the layman, "the cemetery will be detached from your parish." "Is that possible?" exclaimed the priest. "Well, that will be a dead loss." Thereupon the conversation turned to less grave topics.

As the bishop entered the little sod church in that village 300 miles away that night to conduct services, relates Harper's Weekly, the agent read him another telegram, signed by the sheriff's brother. It was terse, but to the point. It read: "We lynched Creegan's murderer this afternoon."

The bishop's eyes flashed, his face lighted, an expression of singular satisfaction spread over his countenance as the agent read the message. "Well!" he exclaimed, joyfully. A moment after he remembered himself and resuming his usual gentle and mild expression, remarked, gravely, "Well, that was a very wrong thing to do, brethren."

Any attempt to fathom the mind of a congregation is usually fraught with danger, says a writer in the Cornhill. An Irish priest who had delivered what seemed to him a striking sermon was anxious to ascertain its effect on his flock. "Was the sermon today to y'r likin', Pat?" he inquired of one of them. "Troth, y'r riverence, it was a grand sermon intirely," said Pat, with such genuine admiration that his reverence felt moved to investigate further. "Was there any one part of it more than another that seemed to take hold of ye?" he inquired. "Well, now, as ye are axin' me, begorra, I'll tell ye. What tuk hold of me most was y'r riverence's paraverseance—the way ye went over the same thing agin and agin and agin. Such paraverseance I niver did see in anny man, before nor since."

## Only One Thing to Do

Cleveland Plain Dealer: "Ah, my noble boy," sighed the marquis as he ran his hand through his perfumed pompadour, "I alwiz said you sold yourself too sheep—much too sheep."

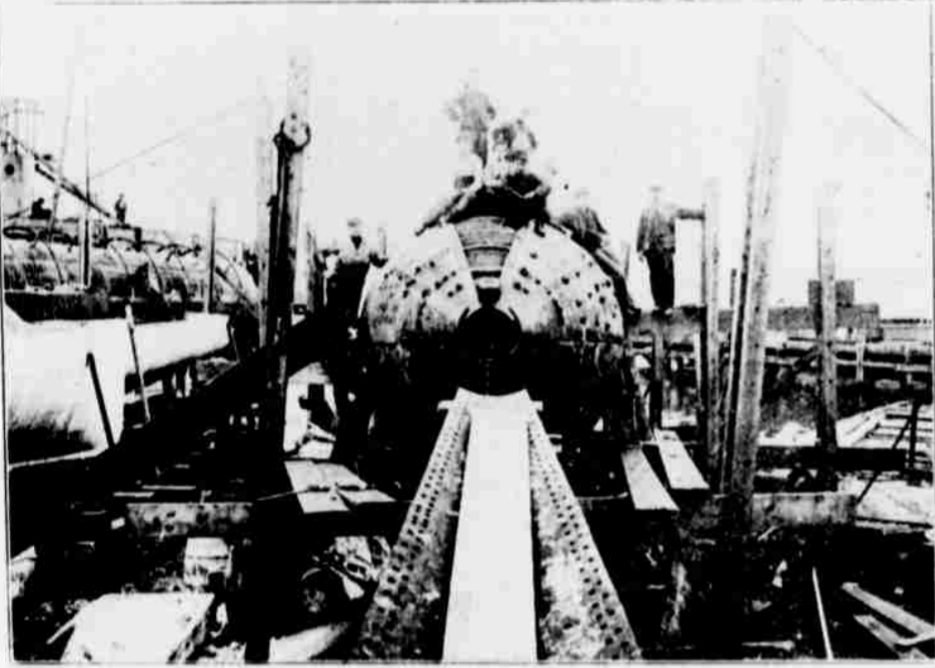
"Navairo mind, mon fathaire," said the noble boy, "eet is too late now to er-r-y ovaire zee speeit meek. We moost make zee best of a bad bar-r-guin. I did not cotae ovaire zis morning to talk of my meea-fortunes. I came to ask of you a gr-r-reat favaire."

The white haired marquis frowned. "You know my circumstances," he coldly said. "I can lend you nossing." "I haf not come for money," exclaimed the count. "I am not such a beeg fool as zat, mon fathaire. It is somesing deeforent. I owe every laundryman in Paris. Not one veel tr-r-rust me now. I come to you to see eef you vill not let zis family laundress do up a few collaires and cuffs for your unfortunate son."

The venerable marquis shook his head. "Eet ees quite compossible what you ask," he said. "We owe Mathilde quite too much as eet ees, and if we added to ner wor-r-rk she would leave us without a moment's warning."

There was a dramatic silence. "Parbleu," said the count as he tapped the edge of his collar with his forefinger. "I haf worn zis collaire one—two—tree days. Look at zees cuffs! Behold zis bosom! Sarpriest! what am I to do?"

"Turn them," said the marquis coldly as he picked up the Temps and resumed his reading.

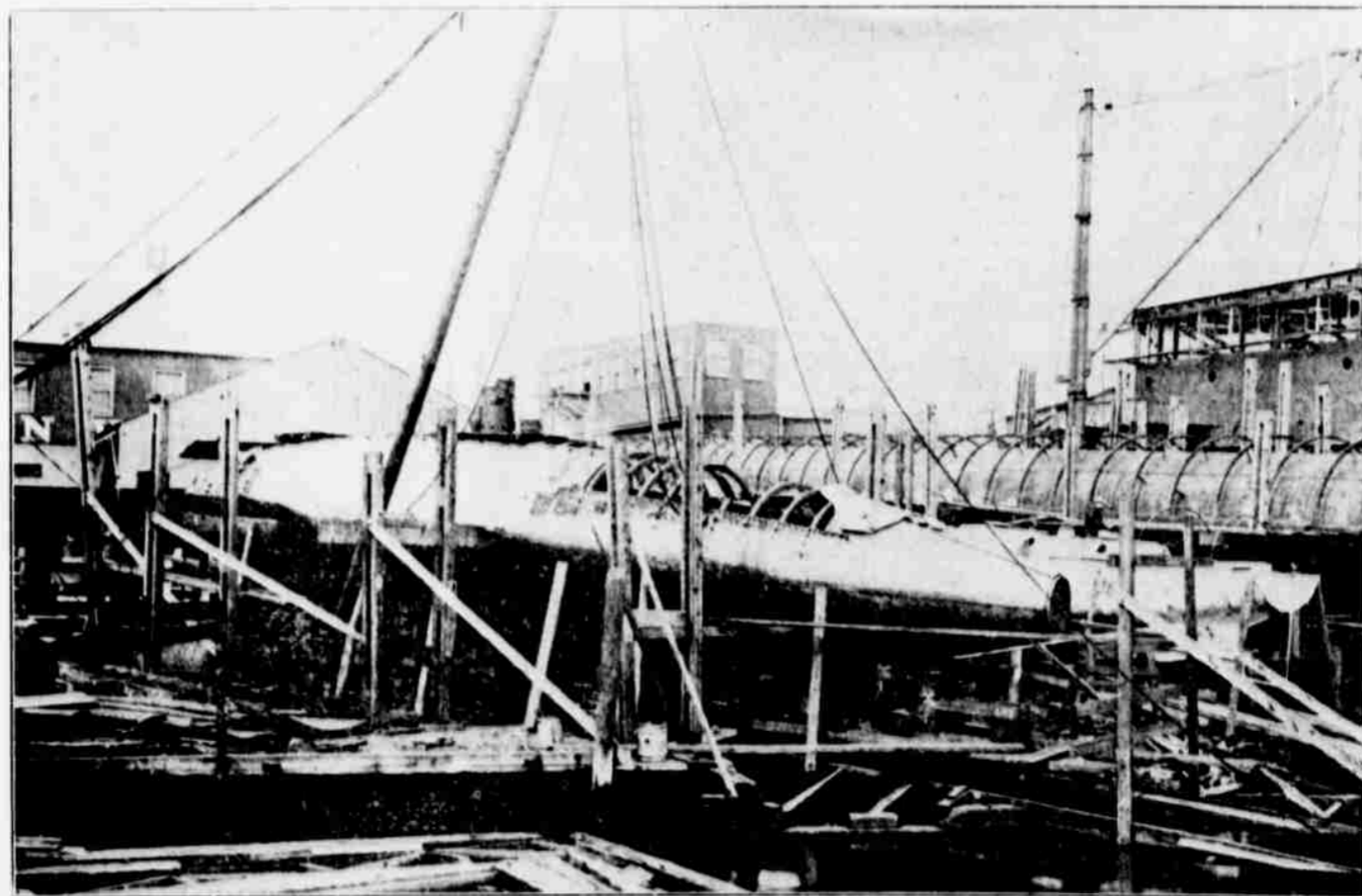


BOW OF SUBMARINE BOAT NO. 7.

## No. 7 is Cigar Shaped.

The dimension and form of the new boat are considerably greater, however, than those of her predecessor recently turned over to the United States government. The Holland is 54 feet 4 inches long, with a diameter of 19 feet 3 inches. Her displacement on the surface is sixty-five tons; submerged, seventy-five tons. Her engine has only forty-five horse power, as against 160 horse power in the new boat. The length of No. 7 is 63 feet 4 inches; diameter, 11 feet 9 inches, and her interior arrangements are such that there is about twice as much room for her crew as there is for the men in the Holland. Her displacement when on the surface is 193 tons and submerged 120 tons.

Though a larger and a heavier boat than the Holland No. 7 is much livelier and easier to handle. It represents the extreme type in size, according to Mr. Holland. A larger vessel he declares will never be practicable. The Plunger, one of the earlier boats that was built according to government demands, is over eighty feet long. Mr. Holland was forced to make it that size, but he gives it as his opinion that it will never be really valuable, on this account. It is still building, having been changed again and again according to suggestions from the Navy department. It is considered doubtful if the Plunger will ever be placed regularly in commission as the Holland has been. It is awk-



SUBMARINE BOAT NO. 7 IN THE SHIPYARD.