

UNCLE SAM'S NEWEST SUBMARINE



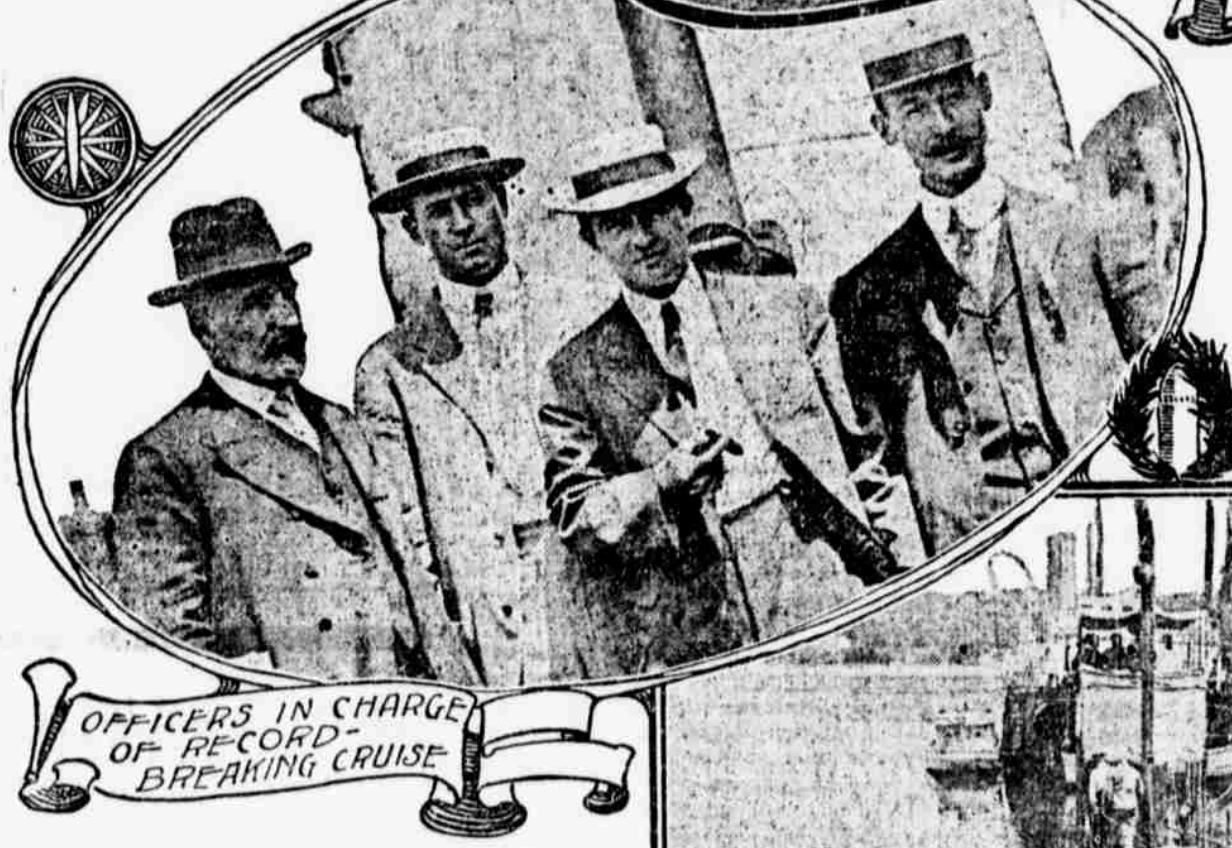
UNCLE SAM'S newest and most interesting submarine boat, the Salmon, is an object of international interest just now and is hailed on both sides of the Atlantic as the most remarkable submarine boat in the world. This fame is due to the Salmon's recent record-breaking cruise from the Atlantic coast to Bermuda and return—a deep-sea voyage such as has had no parallel in the history of under-water craft. The cruise to Bermuda was not only the first cruise by a submarine to a foreign port or out of sight of land, but it was the longest virtually continuous run ever attempted by such a vessel. The total distance covered aggregated nearly 1,700 miles and, as it happened, the little vessel encountered very rough weather during a considerable part of the trip.

Not only did this nautical excursion establish a new record for vessels of the American navy, but it surpassed all foreign achievements. The best performances previously recorded by American vessels of this type was found in the run of the submarine Viper from Cape Lookout to Annapolis, Md., a distance of about 483 knots, and the cruise of a flotilla of submarines from New York to Annapolis, a distance of 385 knots. Among the foreign performances of such vessels there stands out the record of

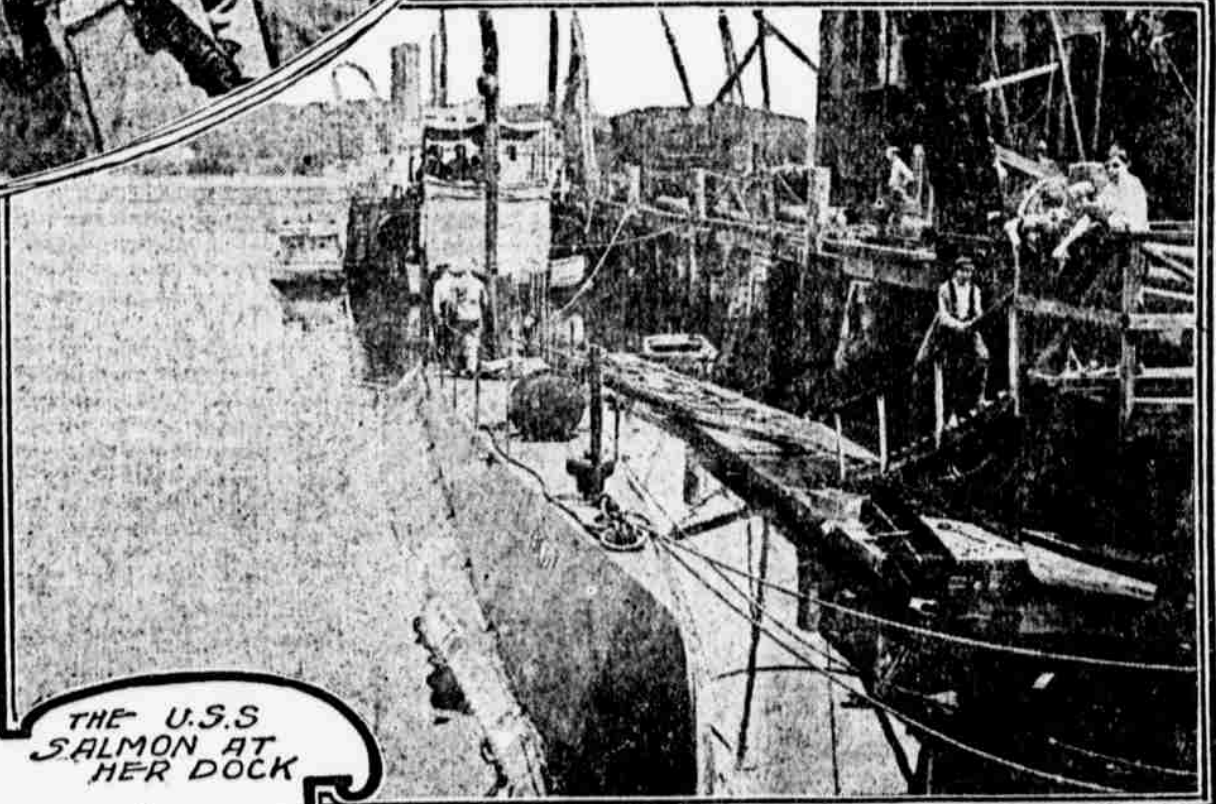


THE DOUBLE PERISCOPE ON THE SALMON

UNCLE SAM'S NEWEST SUBMARINE, THE SALMON



OFFICERS IN CHARGE OF RECORD-BREAKING CRUISE



THE U.S. SALMON AT HER DOCK

English submarines of about the same size as the Salmon, which made the coastwise run from Dover to Dundee, a distance of 512 miles, and the famous performance of the French submarine Papin, which on one occasion made a cruise of 1,200 miles. However, this French achievement is overshadowed by the Salmon's cruise because not only was the distance of the latter much greater, but it was an open sea performance, whereas the Papin cruised along the coast, and, finally, the French vessel is much larger than the new American record-breaker, the Papin being of 550 tons displacement, whereas the Salmon is of but 320 tons displacement.

The Salmon, alike to most of the submarines which have lately been added to the United States navy, is a development of the original Holland type of submarine which first gave the Americans the lead in this class of shipbuilding. The Salmon is 135 feet in length by 14 feet beam and is a twin-screw boat, being driven on the surface by two gasoline engines of 300 horsepower each and propelled when submerged by electrical power supplied from storage batteries.

By way of fulfilling her mission of destruction the little vessel has four torpedo tubes equipped to fire the latest type of torpedo—that is, a torpedo 17 feet in length and 18 inches in diameter, having a radius of 4,000 yards and carrying an explosive charge of 200 pounds of gun-cotton. On her cruise to Bermuda the Salmon carried a crew of 21 men, but it was demonstrated on this cruise that under actual service conditions such a submarine can be operated, in so far as navigation is concerned, by five men—two on the bridge and three in the engine room.

The Salmon is capable of a speed of 14 knots per hour when running awash or on the surface of the water and 12 knots per hour when running wholly submerged. Only three minutes is required to change from surface running by gasoline engines to submerged running by electrical power. The vessel has, on trial, dived to a depth of more than 200 feet without any sign of strain or leakage being manifest anywhere on her steel cigar-shaped body. A unique feature of the equipment of an up-to-date submarine such as the Salmon, is a double periscope whereby, when the vessel is wholly submerged the officers on board can observe all that is going on at the surface of the water. Electrical ranges are provided for cooking the meals of those on board, and there is a reserve supply of 4,800 cubic feet of air, contained in 28 tanks, so that if need be the vessel could be "sealed up" tight and remain under the surface of the water for one or two days and nights without those on board having any communication with the outside world or coming to the surface for fresh air. On the Salmon's Bermuda cruise there were on board, in addition to the officers of the American navy, Capt. Arturo Cuenvas of the Chilean navy, who went for the purpose of reporting to his government on the behavior of the vessel.

Modern submarine boats are of two types, the submerged and the submergible. The submerged when in light cruising condition moves with only a small percentage of the hull above the water; the submergible cruises on the surface much like an ordinary torpedo boat, which it resembles externally. The difference in principle between the two types is slight, but in construction details it is very marked. The submerged boats are usually nearly cylindrical with pointed ends, the general shape being much like that of a Whitehead torpedo. Submergence is effected by admitting water to the ballast tanks or by means of inclined rudders, or both. Submergible boats have two hulls, one inside the other. The outer hull resembles closely that of the ordinary torpedo boat, but has a few projections as possible rising from the general outline, in order to present a smooth surface when submerged. Inside this there is a second hull of nearly circular cross-section and as large as the shape of the outer boat permits. To effect submergence water first admitted to the space between the hulls, and this brings the boat to the "awash" condition. Further submergence is effected by permitting the ballast tanks to fill.

When or by whom was built the first submarine boat will probably never be known. It is said that Alexander the Great was interested in submarine navigation, while subaqueous attacks of vessels was studied at least as early as the thirteenth or fourteenth century. M. Delpeuch states that some English ships were destroyed in 1372 by fire carried under water. In the early part of the seventeenth century submarine boats were numerous, and in 1624 Cornelius Van Drebbel exhibited to King James I. on the Thames a submarine boat of his own design. By 1727 no less than fourteen types of submarines had been patented in England alone. In 1774 Day began experiments with a submarine boat at Plymouth, England, losing his life in the second submergence trial. In the following year David Bushnell built his first boat, with which Sergeant Lee attacked H. M. S. Eagle in New York harbor. Lee actually got under the ship,

and the attack failed only because the screw by which the torpedo was to be attached to the Eagle's bottom was not sharp enough. Robert Fulton's experiments in France and America (1795-1812) demonstrated that a vessel could be built which could descend to any given depth and reascend at will. Plunging mechanism was devised about the middle of the eighteenth century, but Fulton developed the vertical and horizontal rudders and provided for the artificial supply of air. A form of periscope existed in 1692 and an improved kind was patented in 1774; in 1854 Davy still further developed it. Phillips' wooden boat on Lake Erie was crushed by the

ON BLOODY GROUND

Germany Erects Fitting Memorial on Gravelotte Battlefield.

Marks the Scene of One of the Fiercest Battles of the Franco-German War Where Napoleon's Downfall Began.

Berlin.—Recently the anniversary of Gravelotte, one of the fiercest and most bloody battles of the Franco-German war, was officially celebrated on the battlefield. The ceremonies were very impressive and included a church parade at Metz and the unveiling of a monument in memory of the soldiers of the Eighth German Grenadier Guards, erected on the road between Gorze and Rezonville, at a point ten miles southwest of Metz and five miles south of Gravelotte. The occasion was a memorable one and one full of interest to many German-Americans who passed through the direful experience of the battle.

Gravelotte is a small town situated in Lorraine, eight miles west of Metz. During the war Napoleon III. made his headquarters at Metz. The Germans under Prince Frederick Charles and General Stelmetz by a succession of victories had forced the French forces in the direction of Metz as far as Gravelotte. Here, eight miles from the position of Napoleon, the French made their final stand. The Germans with a force numbering 211,000 advanced against the French under Bazaine, whose army did not exceed 140,000. The French, knowing the fatal results of defeat, fought courageously and stubbornly. The Germans, realizing the victory would ultimately result in the surrender of Napoleon and his forces at Metz, fought with a steady determination that knows no failure. The result was a fierce and bloody battle in which the Germans, completely victorious, lost 904 officers and 19,658 men; the French, decisively routed, retreated to Metz with a loss of 609 officers and 11,605 men. This left the



The Memorial at Gravelotte.

triumphant Germans in front of Metz where Napoleon was shut up with his forces. The Germans began the siege and in a few days the French were obliged to surrender with their emperor at their head. This was the crowning victory of the war and it was also the victory that spelt the fall of Napoleon III. The battle of Gravelotte was practically the forerunner of the downfall of Louis Napoleon and also the decisive victory of the war.

The handsome monument which was recently erected on the battleground is a very fitting memorial of the brave men who gave up their lives and hopes for the honor of the fatherland. There are many Germans, now American citizens, to whom the erection of this monument is of vital interest because they had the honor of taking active parts in this very important battle.

Famine Bread of Years Ago.

Muncie, Ind.—We of this part of the earth today know little of the awful ravages of famine, such as has visited certain countries in the past and still is a menace and even worse in India. It may be a trifle difficult, therefore, for the average person to understand the fascination that attends a glimpse of such gruesome relics as is faithfully kept by Joseph Hummel, a business man of Muncie, who has two small loaves of bread of the kind baked in the frightful famine that swept Germany nearly a century ago—1816-17. Wheat then sold for \$34 a bushel, so it is not at all surprising to find that the loaves only weigh an ounce and a half each. The loaves are heirlooms in the Hummel family and came into Mr. Hummel's hands when he was visiting his old home in Wurtemberg, 20 years ago.

Lightning Enters a Mine.

Pittsburg.—Lightning seldom gets so far down in the earth as to trouble the miners, but a startling instance occurred recently at the mines in West Schuylkill, Pa., where it illuminated the murky shafts 1,800 feet below the surface. When a terrific thunderstorm came up the underground workings were lighted up and made as bright as the sun at mid-night; but no damage was done, although a number of mules, which have not seen daylight for years, are believed to have been blinded by the dazzling light.

A Valuable Load.

Chicago.—Four millions of dollars in gold were carried in moving vans through the streets of Chicago quite recently. The bags of money were tumbled haphazard into the vans and without the slightest mishap were placed on deposit in the bank. The bags were large and made a rather large pile.

OLD SOLDIER WISHES TO HELP SUFFERERS FROM KIDNEY, LIVER AND BLADDER TROUBLES

I am frequently troubled with kidney and bladder trouble, especially in the Spring and Fall. Being an old veteran of the Civil War, a little exposure or cold settles on my kidneys, and then I am laid up with kidney or bladder trouble. Your Swamp-Root was recommended to me a number of years ago, and I took a number of bottles of it and was more than pleased with the results. I consider Swamp-Root the greatest and best kidney medicine on the market, and it never fails to give quick results in kidney trouble, bladder trouble and lame back.

Dr. Kilmer's Swamp-Root has done me so much good that I feel if any words of mine will be the means of relieving any poor sufferers that you are at liberty to use this letter as you see fit.

Yours very truly,
GEORGE W. ATCHLEY,
Des Moines, Ia.

State of Iowa } ss.
Polk County }

A. R. Hansen, a retail druggist of this city, being first duly sworn, deposes and says that he is well acquainted with George W. Atchley, who gave the above testimonial; that said Atchley made and signed said testimonial in my presence and that I have said said Atchley a part of the Swamp-Root referred to in above testimonial. Affiant further says that George W. Atchley is a well known citizen of this city and an honorable man and that it was Mr. Atchley's desire to give said testimonial.

A. R. HANSEN,
Subscribed to in my presence and sworn to before me, this 23rd of March, 1909.
E. J. FISK, Notary Public.

WHEN I GET OUT TO PASTURE, I'VE GOT THE CORN, AND LIFE HAS DINNER READY, SHE SIMPLY EATS HER HORN.

He Knew.
A small boy brought up by a fire-eating father to hate anything connected with England or the English was consigned recently to eat dinner with the nurse while the family entertained a genuine English lord in the dining room. The grown-up's meal had come to that "twenty minutes past" stage where conversation halts directly, when a childish treble fell upon the dumb-waiter shaft from the kitchen. This is what the astonished nobleman heard:
"Fe, fi, fo, fum,
"I smell the blood of an Englishman."—Wasp.

Like the Other Kind.
It was in a "down east" village that the young man met his sweetheart, a charming country beauty. When he returned to the city he sent her a jar of cold cream to keep her cheeks as fresh as the budding rose.
On his next visit he asked her how she liked his little gift.
"The taste was very nice," she said, with a rather sickly smile, "but I think that I like the other kind of cream best, dear."—Lippincott's.

COFFEE WAS IT.
People Slowly Learn the Facts.
"All my life I have been such a slave to coffee that the very aroma of it was enough to set my nerves quivering. I kept gradually losing my health but I used to say 'Nonsense, it don't hurt me.'
"Slowly I was forced to admit the truth and the final result was that my whole nervous force was shattered.
"My heart became weak and uncertain in its action and that frightened me. Finally my physician told me, about a year ago, that I must stop drinking coffee or I could never expect to be well again.
"I was in despair, for the very thought of the medicines I had tried so many times nauseated me. I thought of Postum but could hardly bring myself to give up the coffee.
"Finally I concluded that I owed it to myself to give Postum a trial. So I got a package and carefully followed the directions, and what a delicious, nourishing, rich drink it was! Do you know I found it very easy to shift from coffee to Postum and not mind the change at all!
"Almost immediately after I made the change I found myself better, and as the days went by I kept on improving. My nerves grew sound and steady, I slept well and felt strong and well-balanced all the time.
"Now I am completely cured, with the old nervousness and sickness all gone. In every way I am well once more."
It pays to give up the drink that acts on some like a poison, for health is the greatest fortune one can have.
Read the little book, "The Road to Wellville," in pgs. "There's a Reason."