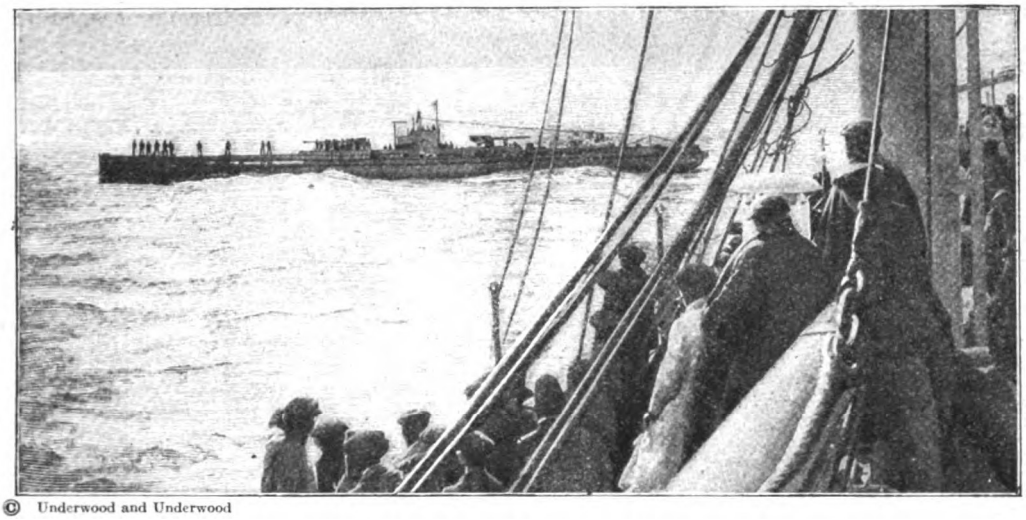
Terrorizing Our Atlantic Seaboard

Depth-bombs, nets, mines, destroyers, and seaplanes have not exterminated the pest of the seas nor kept it at home. How can America protect herself?

By Simon Lake



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The German terror of the sea has become more terrible. The latest cruiser type, here pictured, the type that probably sank ships off our coast, is about 250 feet long and is armed with two 5.9 inch guns. She can fight armed merchantmen, old destroyers, and the average patrol

Mr. Lake needs no introduction to our readers. He is one of the pioneer inventors who gave us the practical submarine. He has been employed at various times by the governments of the world to design or build submarines, and it was he who taught the Krupps how to build U-boats.—THE EDITOR.

ALTHOUGH the U-53 voyaged across the Atlantic, slipped in and out of Newport and then sank half a dozen ships off Nantucket at a time when we were still neutral, although the *Deutschland* made two highly successful and profitable visits to these shores, the recent attacks of submarines on ships off the Atlantic coast amazed us with their dramatic suddenness. But, then, surprise is the very essence of the U-boat's methods. A full week elapsed before the Government was aware of the first sinking. The American public naturally asks itself: What can be done to stop the Germans?

Dernburg, of unsavory memory, recently announced that the average cargo is worth $175 a ton and that it costs $250 to supply each new ton of shipping. At this rate, estimates the English naval critic, Arthur Pollen, the submarine war has already cost the anti-German world over $6,150,000,000. In four years about 22,000,000 tons of shipping have been lost.

In the third year of the war, by which time it might be concluded that the various methods devised for coping with the submarine would have been made truly effective, about three million tons were sent to the bottom.

And what is the remedy proposed to offset this continuing loss? To build ships faster than the U-boats can sink them. To me nothing is more ridiculous. Even admitting that all the tonnage required can be produced in the way of surface ships, it must also be admitted that to do so entails the employment of thousands of workmen and thousands of tons of material required for other purposes. A crumb of comfort is found in the fact that the sinkings are not quite so numerous as they were two years ago. There are fewer ships to sink. Besides, captains are more cautious than they were, and nets and patrols count for some-

thing, however little. It remains to be seen if there will not be a marked increase in the sinkings as soon as the new ships that we are building are commissioned.

Submarines Are Not Easily Sunk

How many submarines have been sunk since September, 1914? No one knows. But despite everything, the most optimistic compiler of statistics would not place the number at more than one hundred. Commander Taussig of our navy recently said that "a submarine is a very difficult bird to catch." He had himself engaged only one U-boat in seven months and was not sure that he had sunk any.

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Saved with all her nine lives

Submerged, a submarine must keep moving or else must rest on the bottom; and this last is impossible except in depths which are less than two hundred feet. Now the Atlantic seaboard is literally made for concealing submarines. Taken as a whole, it is a long stretch of sand which slopes out into the ocean very gently. Within a hundred miles off the coast the submarine can find a resting place that is ideal.

Those who place their reliance on seaplanes and dirigibles to detect a submerged submarine know little of the difficulties that confront the observer in the air. It is only in still, clear water that a U-boat can be seen beneath the surface. In even moderately rough water nothing is visible; and the water is usually more than moderately rough. Moreover, let it not be forgotten that many long hours elapsed before one of the lifeboats cruelly set adrift by the Germans after sinking a ship off our coast was picked up; no seaplane had helped in her recovery.

A U-Boat Needs No American Base

We read much nonsense about mysterious U-boat bases on the Atlantic coast. No land base is necessary. A German submarine of the latest cruiser-type is of about two thousand tons displacement and is about two hundred and fifty feet long. Her carrying capacity is easily six hundred tons. Suppose that four hundred tons of fuel-oil are taken on board, one hundred tons of shells, bombs and torpedoes, and one hundred tons of food. With such a supply of stores she could prowl in our waters for many weeks, and even for months. She would husband her fuel, jogging along at about ten knots, as a rule, and attaining a maximum of fourteen only when she is bent on overhauling a fleeing ship. If a base were necessary an out-and-out submarine cargo-carrier of the *Deutschland* type would answer all purposes.

There is but one remedy, in my opinion, and that is to pit submarine against submarine. Build submersible cargo-carriers, like the *Deutschland*, and the Allies may snap their fingers at the U-boat. I have advocated the plan in the POPULAR SCIENCE MONTHLY, and in other publications. It is unnecessary to repeat the details. Since I wrote for the POPULAR SCIENCE MONTHLY I have studied the subject further. I have even designed a submarine cargo-carrier according to the specifi-

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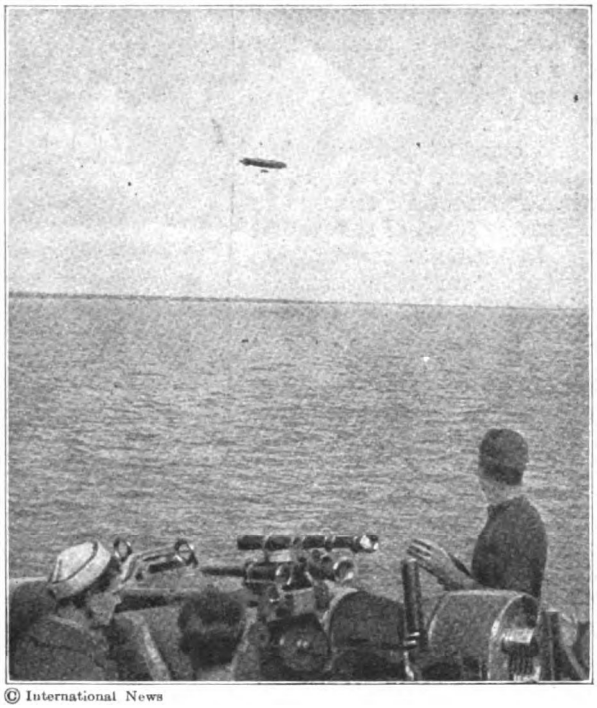
They were on the "Texel", torpedoed and beached off New Jersey

cations of Lloyd's—specifications which are followed the world over in building surface ships. To my astonishment the resulting vessel proves to be far stronger than I had imagined. It would actually be able to withstand submergence to a depth of eight hundred feet without collapsing. No submarine of the present day could descend so far in safety.

The Armored Submarine of the Future

Now that its radius of action has been so tremendously increased the submarine problem becomes more difficult of solution. The mid-Atlantic becomes as dangerous as the waters surrounding Great Britain.

The new German diving cruisers carry 5.9 in. guns and can fight. We read almost every day of engagements between armed merchantmen and U-boats. In other words, the submarine does not even have to submerge in order to escape. Safety is now sought beneath the waves only in desperate situations. As for the many patrol vessels that swarm in European and American waters, most of them are too slow and too lightly armed to be of any real value. Thus, it is said that the Ford submarine chasers are to be armed with only four-inch guns.



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Far, far out at sea the navy's dirigibles ("blimps" of the English model) hunted for U-boats and for survivors in life boats

What Von Tirpitz Wanted

We have here some indication of what the future holds forth. U-boats will unquestionably be armored; they will carry heavier guns; they will be larger; they will be faster.

If I know anything of the German mind and of German technical boldness—and I may lay claim to some such knowledge in view of my past relations with the German navy and with the Krupp works—the Germans are not unlikely to produce an armored submersible during the present war, if it lasts much longer. About twelve years ago, at a time when I was asked by the Krupps to rectify some errors that had been made by them in building submarines for the Russian government, I met the redoubtable Admiral von Tirpitz. I showed him the plans for two submarines — one a defensive type, the other an offensive type. The offensive type had an armored gun turret such as I am now advocating. When von Tirpitz saw the blueprints of the offensive type, he brushed aside the plans of the other and said: "This is what we want."

At that time the Navy Department of the United States was taking a rather lukewarm interest in submarines and had not made up its mind in what particular niche the submarine fitted. But von Tirpitz, father of the German navy, von Tirpitz, the advocate of ruthless submarine warfare, saw the possibilities at once and displayed interest in a type about which our own officers are still skeptical. It is not likely that he has forgotten his desire for a craft which would be a kind of submersible battleship and which would be able to take its place lined up with dreadnoughts.