

The Submarine

The Swordfish of Modern Naval Warfare

Keen interest in the whole question of submarines has been aroused by the success of a German submarine flotilla in sinking the Aboukir, the Cressy and the Hogue. Needless to say, the controversy launched by Sir Percy Scott's letter in The Times of June 5 last as to the relative efficiency of the battleship and the submarine in modern naval warfare has been heatedly revived.

As to what the submarine is and does the naval correspondent of the London Morning Post gives the following lucid description:

A Submarine's Eyes

"So much has been written concerning what the submarine, by a flight of imagination, may achieve, that most people are somewhat uncertain as to what the submarine actually is and does. To begin with, she is shaped like a cigar, and she carries a tower on her back. Inside the tubular steel hull, valves and tubes and pipes line the walls; aft, in a space so low that the engineers can hardly stand upright, are the internal combustion engines and the electric motors which drive the vessel when she is under water. Below the floor, or deck, of the inside of the hull are petrol and stores. Forward are the torpedo tubes. Amidships there projects downwards from the ceiling a thick brass column ending in a brass cross piece. This is the base of the periscope. When the boat is submerged and the officer desires to see what is going on above, he sets a hand on each arm of the cross-piece, which is level with his face, and rotates the column, while he looks into the mirror.

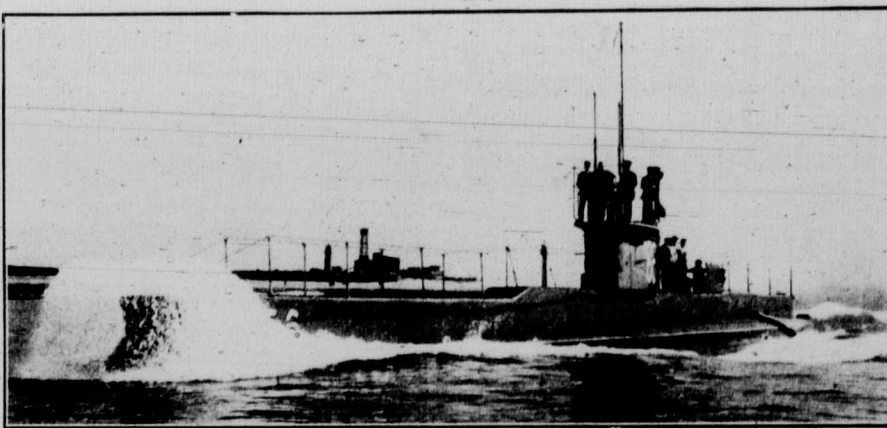
"In the mirror he beholds an image, little and bright, of a section of the sea and horizon, and by swinging it round he can scan the whole circle, reflected in the periscope above, which is the eye of the steel fish. Alongside the periscope is the upright steel ladder leading thru two hatches to the deck of the conning tower, which is raised five or six feet

above the top of the hull. It is about four feet in diameter, and is protected by a breast-high rail lined with canvas. Here is the wheel, and here, when the vessel is running awash, stand the captain and the quartermaster. In fine weather those of the crew who are not required below are grouped on the little half-deck below the conning tower, just above the steel hull itself. Officers and men are dressed in seaboots, sweaters and rough clothing.

Engineers Squat Placidly

"The submarine running awash forges

"The method of the submarine is to cruise at economical speed, ten knots or less, on the surface, until she sights a hostile vessel. As she is so small she can see another vessel before the other vessel can see her. Then she sinks. The captain and the crew go below; the hatches are closed; and the captain, swinging his weight upon the cross-piece from the periscope, his eye upon the mirror, gives his orders. The crew are lying along the sides, ready to turn valves on or off. The internal combustion engines are stopped and the propeller shaft is connected up to the electric



Britain's Largest and Most Powerful Submarine in the E Class

sullenly onwards with a heavy grinding noise, the water lifting and dripping from the gills which project on either side of her snout. Below, the hull is filled with the crashing of the furious engines cramped into the narrow tube of steel. The engineers squat placidly among the racing rods and pistons, in the thick atmosphere tainted with fumes. Should the seawater enter the hull and mix with petrol gas, the fatal chlorine gas is formed, and the crew are suffocated.

motors. There is a sudden silence.

"The process of submerging is a process in the brain of the captain. He has a mental picture of what each tank contains, and how much weight is driven out forward or aft at each order, and what will be the effect upon the vessel. He communicates this process to the vessel itself. He must first dip her bows slightly, then her stern, then bows again, and so on. If he makes a mistake the submarine may dive down, and then all is done.

The process is reflected in the brain of his lieutenant, who stands near by the captain. In ordinary vessels, if an officer faints or makes a mistake, there are a dozen people at hand who can put it right, because they know what ought to be done.

"Not so in the submarine. The only person besides the captain who knows what is going on is his lieutenant; but the consequences of a mistake would follow so quickly that the lieutenant could not rectify it. Nor would he know in all probability that a mistake had been made until the consequences began. The men lying beside the valves know nothing except how to do what they are told. Nor is there any sensation of motion as the boat sinks. It seems to be as still as a drawing-room on shore.

Steering When Totally Submerged

"The periscope, which is about the size of a saucer, remains about 18 inches above the surface, and, viewed from the deck of a ship, all that is seen is a flitting pennant of white spray, as it cuts the waves, like a seabird's wing. In any ripple it would be almost imperceptible at two or three hundred yards. Upon approaching to attack, the submarine sinks lower and submerges her periscope, so that her captain, looking in the mirror, sees his little and bright picture washed out in green—the green of the water. And from above nothing is visible at all.

"The submarine is now blind. She cannot see thru water, but she can steer a course. Her captain has made his calculations before he submerged his periscope. And the range of a German torpedo is about 3,000 yards at 25 or 30 knots. The submarine can fire her torpedoes, go about, presently rising until her periscope is above water, then herself continue beneath the surface until it is safe to rise, and like a whale, to breathe again."

How Socialism Came to England

Government takes Control of Everything as a War Measure and runs it for the Benefit of all the People.

Railways Nationalized and running very well—National Marine Insurance and Paper Money Based on Government's Credit

By JOHN S. STEELE in Manitoba Free Press

Two months ago anyone who had declared that England would have been living under a socialist government within the next few days would have been pitied as a harmless lunatic. If he had added that the socialist government would have been administered by Mr. Asquith and Mr. Lloyd George and Mr. Churchill and all their colleagues of the Liberal administration, with the enthusiastic support of the Tory party, he would have been considered a dangerous madman and run off promptly to the nearest padded cell.

All these things, however, have come to pass. England today is living under a government which is so nearly socialist that the socialists can find no fault with it. Party politics have disappeared and Lloyd George, the Liberal chancellor of the exchequer, has as his right hand man in devising schemes for raising revenue and protecting the credit and financial stability of Great Britain, Austen Chamberlain, who held his job in the last Tory administration, and who was his sternest and most unrelenting critic in parliament. Mr. Asquith, the prime minister and leader of the Liberals, has as his chief helper Bonar Law, the Tory leader, and Lord Lansdowne is working hard at the foreign office as an unpaid assistant to Sir Edward Grey. The same is true in every department of the government. In England war with Germany has brought about the time described by Lord Macaulay, "When none was for a party, but all were for the state." It has all but realized the second couplet: "Then the rich man helped the poor, and the poor man loved the great." At any rate there are today in England few

men who would dare, even if they were base enough to desire it, to make an unfair profit out of the misfortunes of their fellows, or to enforce their legal rights harshly.

Even if they did try to enforce what have hitherto been their rights, they would find themselves brought up with a very short turn by the judges and the courts. English judges have ceased for the time at least to deal out law and have set themselves to doing justice tempered with mercy.

Stopping Panic

When war was declared on Germany it was seen at once that unless something was done to organize the life of the nation in accordance with the new conditions, there would be one of the most disastrous commercial and financial panics the world has ever known. The whole fabric of credit on which trade rests was shaken. Individuals hastened to withdraw gold from the bank and hoard it. There was a rush, chiefly of panic-stricken women, to buy food in large quantities and store it. People began to talk about the thousands of unemployed that would soon be walking the streets, and altogether it looked as if England were going to defeat, not by the Germans, but by her own fears.

Then the government stepped in. Half a dozen short acts of parliament were passed. Each of them contained perhaps a hundred words and took half an hour to pass thru all its stages in both houses. The most insignificant bill usually takes weeks, and these changed the whole theory of the government in Eng-

land. They were introduced, read three times in each house, one of the ministers said a few words in explanation, perhaps, and one of the former opposition leaders added a few more and they became law. They gave the government various powers, and the government at once proceeded to exercise them.

National Railways

One of the first acts was the nationalization for the time at least of all the railways. There was none of the trouble which economists have declared would attend anything so gigantic as the nationalization of the railways of England. The government just took them. The railway staffs became, for the time being, state employees, and a committee to manage the railway system of Great Britain and Ireland was formed from the general managers of the old companies. The immediate effect was an enormous economy in working. Of course, the first work of the railways was to carry troops and military supplies during the mobilization, but it is remarkable how little the public was inconvenienced even during this period. No one who really wanted to go anywhere was unable to go. It is true that there were fewer trains and that time tables were somewhat disorganized, but the fact is that the trains got thru and carried all of the general public who wished to travel, and all the freight that had to be moved. When the mobilization was over a new time table was announced, which gave the public all the railway facilities it required, but eliminated all the wasteful and silly competition between lines covering the same districts. The work was simply

divided between them, and only trains enough to carry the traffic were run. Whether the railways ever return to private ownership or not, after the war—and there are many highly placed Englishmen who think they will not—it is certain that there will be no more of this kind of competition.

Question of Finance

The next thing the government tackled was the question of finance. Fortunately August 3 was a bank holiday so that the people were unable to rush to the banks on that day and carry off all the available gold. The government decided to extend the holiday for three days more so that the banks remained closed for the most of a week. When they reopened people had calmed down, but more than that, in the interim the government had printed and issued millions of \$5 notes—the smallest note in England hitherto has been for \$25—had made postal orders for smaller amounts legal tender and had guaranteed these notes and postal orders with all the credit of the United Kingdom. The few foolish persons who rushed to the banks to draw out their money were paid in notes and the panic was checked. Another financial step was the declaration of a moratorium postponing the payment of debts for a month.

Food Prices

In the meantime, however, there had been something like a food panic. People imagined that the German fleet would make the import of food impossible. Prices began to soar and people began to rush to the stores to buy food for

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