Analysis of British Warship Losses

Number of Vessels Lost During the War and Causes of Their Destruction

By Percival A. Hislam

MANY efforts have been made from time to time to analyze German naval losses according to their cause—gunfire, torpedoes, mines, and so on—but a similar process seems never to have been attempted in the case of British losses. This is the more curious because the British naval authorities are much less reticent than the German with regard to their losses, while in the nature of things—the British fleet having to keep the sea at all times and in all weathers—there is a great deal more material to work upon.

In any survey such as is made in the present brief article it is necessary to restrict the classes of vessels dealt with, for reasons of which many are obvious. For instance, losses of submarines are very rarely announced. The sinking of only one British craft of this type (the C34, sunk by a German submarine last July), has been announced since April, 1916, but it is not conceivable that this can represent the only wastage that has occurred in such a period. It is also the custom of the British authorities to announce only in special circumstances the destruction of small mine-sweepers converted from fishing craft, though all losses of sweepers of a larger type, and those specially designed and built for this service since the outbreak of war, are published. For these reasons, among others, the details that follow are confined to warships of the more familiar types—battleships, cruisers of all classes and destroyers.

Dealing first of all with battleships, including battle-cruisers, the losses of the British navy down to the end of 1917 amounted to 15 ships. Three of these, all battle-cruisers, were destroyed by gun-fire in the battle of Jutland Bank, and the only other one to be sunk by an enemy surface ship while actually in action was the battleship "Goliath," torpedoed and sunk by the Turkish destroyer "Mauvenet-i-Millet" in the Dardanelles on the night of May 12th, 1915. Four were accounted for by submarines—two off Gallipoli, one near Malta, and one in the English Channel—while two were destroyed by internal explosions arising from unexplained causes. The remaining five were sunk by mines; but this total includes the "Irresistible" and "Ocean," whose destruction in the Dardanelles on March 18th, 1915, is believed by many to have been caused by dirigible torpedoes discharged from stations which the Turks are known to have prepared on the shores of the Straits.

The cause of British capital ship losses has, following the official accounts, therefore been as follows: Mines, 5; submarines, 4; gunfire, 3; internal explosion, 2; and one from a torpedo fired from a surface ship. Eight of the total were sunk by the end of 1915, five in 1916,

and only two in 1917, the last being the "Cornwallis," submarined in the Mediterranean, and the "Vanguard," a dreadnought, blown up from within.

Armored cruisers have suffered to the extent of 12 in a total of 34 existing at the outbreak of war. In their case gunfire claims the greatest number, two having been sunk in this way at Coronel and three in the Jutland battle. Four have been submarined—three on September 22d, 1914, and the fourth, the "Drake," not until October 2d, 1917; that is, after a lapse of more than three years. The "Hampshire," in the loss of which Lord Kitchener and his staff were involved, is still stated officially to have been mined, but no corroborative details have ever been made public (such, for instance, as the discovery of other mines in the vicinity where the ship was lost), and many people are convinced that treachery had a hand in the affair. It may be mentioned that large numbers in England, including Lord Kitchener's sister, insist on believing that the Field Marshal was rescued by a German submarine and is now a secret prisoner in Germany. One armored cruiser ("Argyll") has been lost through stranding, and one ("Natal") through internal explosion, the latter occurring when there was a large party of civilians on board. The rate of loss among vessels of this type has, similarly with battleships, diminished considerably, seven having been sunk down to the end of 1915, four in 1916, and only one in 1917.

In the smaller cruiser classes, including merchantmen armed for cruiser service, the numerical losses have been considerably heavier, while they have not fallen off with the lengthening of the war. This is due to the unvarying permanence of the patrol and also to the growth of the submarine menace, the latter being reflected in the fact that while only seven were sunk by submarines down to the end of 1916—that is, in two years and five months—five were destroyed in this way between May and October, 1917. Out of a total loss of 22 of this type only three were sunk in fighting action. The "Pegasus," lying helpless with her fires drawn at Zanzibar, was destroyed by the German cruiser "Konigsberg" in September, 1914; the mercantile cruiser "Alcantara" was torpedoed by the raider "Greif" on February 29th, 1916, after the latter had been reduced to a sinking condition by gunfire; and the "Ben-my-Chree," a seaplane-carrier, was set on fire and destroyed by Turkish batteries in January, 1917. Submarines have accounted for no fewer than 12 cruisers and similar vessels, while one, the "Princess Irene," fitted as a mine-layer, blew up in May, 1915, with great loss of life. The armed liners "Clan MacNaughton" and "Viknor" foundered in heavy

seas, critics alleging the cause to be instability arising from the improper mounting of the deck guns and insufficient ballasting; but this has been officially denied. The famous liner "Oceanic" was the first wreck of the war, stranding on the Scottish coast in September, 1914.

Seeing that England had about two hundred and fifty destroyers in commission at the start of the war and that these craft from the very beginning have been worked far harder as a class than any other, it is remarkable that no loss was sustained until May, 1915, when the old "Recruit" was submarined in the North Sea. Down to the end of that year (in 17 months of war) only 4 destroyers were lost; but 16 went in 1916, and 23 in 1917. The total of 43 is an extraordinarily low one in view of the incessant work of these craft in all weathers, in seas infested with mines and submarines, while the conditions of navigation at night are most hazardous. Thirteen destroyers were sunk by gunfire, eight of them in the Jutland fight; while of the remainder five were submarined, two torpedoed by enemy destroyers and one stranded. Eleven foundered after striking mines, and eight as the result of collision, while three sunk on December 22d last were either mined or submarined—it is as yet uncertain which.

Taking these principal warship classes together, British losses down to the end of 1917 may be summarized thus:

	1914-15	1916	1917	Total
Gunfire.....	3	16	4	23
Submarined.....	12	3	10	25
Torpedoed by surface ships.....	1	1	2	4
Mined.....	6	5	9	20
Collision.....	—	4	4	8
Internal Explosion..	3	—	1	4
Foundered and stranded.....	5	—	—	5
Total.....	30	29	30*	89*

*Add 3 destroyers, the actual cause of whose loss—either mine or submarine—is uncertain.

If it were possible to present the details on a tonnage basis the latest year would show a very much lower total than the others, since its total includes 23 destroyers and only three armored ships, while 1916 saw the loss of 16 destroyers and 9 armored ships, and 1914-15, 4 destroyers and 15 armored ships. Needless to say, a single big fleet action fought to a finish would in all probability change most radically the proportion as between ships sunk by gunfire and by other causes, but the above details, summarizing nearly three and a half years of war, are not without their instructive side.

Correspondence

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The Elements of Victory

To the Editor of the SCIENTIFIC AMERICAN:

The movements of the world war have been made by successive evolutions of the determining elements of victory. The first element was rapidity of infantry mobilization. Then came rapidity of artillery mobilization, range of artillery fire followed by intensity of artillery fire. This has not been replaced as yet except in the control of artillery fire by means of which advance under barrage is possible and in the degrees of intensity as indicated by the names, hail of fire, curtain of fire, drum fire and hurricane fire.

From following these facts we may gather that a change in the mode of air fighting is about due, and may be looked for at an early date.

Hitherto speed, horizontal and climbing, has been the determining element. Speed, speed and more speed! Each new body design attempts to out-stream-line that of the previous model and motors are stripped and pared to skeleton proportions to assure the light weight for climbing facilities.

The chief arguments in favor of lightning speed are that the aviator outspeeding the enemy can keep in the "blindspot" of the enemy's guns and that he can secure a favorable position for firing upon the enemy plane.

Germany's new planes answer this difficulty by being practically without a "blind-spot." The overpowering numerical superiority of America's planes knocks another prop from under the position-maneuvering argument, inasmuch as they will probably outnumber Germany's planes so much that they can always fight in groups of double or treble the number of the enemies' and can fly in strata one above and one below the ene-

mies' planes, each pair or three fighting a picked machine from the enemy force.

Will Germany have a counterweapon to America's flock of airplanes? Thus far, to every new weapon of the war a more or less effective counter-weapon has been devised. In this case the answer will probably be a large, stable, armored battle-plane, armed with rapid fire guns of much larger caliber than those now used, and embracing the non-recoil principle of the gun described in the April 21st issue of the SCIENTIFIC AMERICAN. I use the word "rapid-fire" here in a relative sense. This with the added stabilization would mean that the Boches could do their fighting out of the effective range of the guns of our planes until the Allies would devise an effectual remedy. However the waning use of a weapon for the aggressive indicates the weakening of the power using it, and the arrival of the American war flock will undoubtedly compel the German air forces to abandon air drives and raids, using their planes solely for defensive purposes. This is one more letter in the handwriting on the wall.

We see many phrases such as "waiting for the spring drive," "during the winter lull," and others implying that, during the winter the armies will crawl back into their lairs and hibernate like bears. Undoubtedly there has heretofore been considerable cessation of the fighting during the winter but, in view of the great reinforcements of the Americans next spring, would it not pay from the enemy's standpoint to make a heavy winter offensive at almost any price? For the past two winters numerous inventions have come to light to give winter comforts to the soldiers and to assist in the winter mobilization of the artillery. By either side concentrating their energies upon this phase of the war, a winter attack would probably be made feasible. It is apparent that a "strategic retreat" would be infinitely more difficult than a winter offensive.

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New Industrial Uses for Peat

IF the present coal shortage is duplicated, or even aggravated, next winter, as some prophets predict, Americans may begin to make use of the peat beds in various parts of the country. Peat has long been used for fuel in Ireland, Scandinavia, and elsewhere. In Sweden it has even been used of late years for stoking locomotives. But in the United States it has been little utilized except for horse bedding, etc., in certain country districts. It is admirably adapted to this because of its high absorptive power, from eight to twenty times its own weight, its capability of combining with ammonia, of deodorizing liquids and of killing germs.

But it is in Germany that the greatest effort has been made to find industrial uses for it. German technologists have long urged the importance of its latent potentialities, with the result that the Government has opened at Hamburg a laboratory for the investigation of its possible industrial applications, the *Laboratorium für Technische Torfverwertung*, as we learn from *La Nature* (Paris). The same authority states that it has been found possible to extract from peat chemically pure fibers capable of being bleached, dyed, and woven for the making of carpets, draperies, and even of clothes.

Experiments have also been made both at Hamburg and at Dresden with the object of preparing from peat a substitute for wood. This is done by combining it with a wax under a pressure of about 500 atmospheres. The resulting product, or artificial wood, is said to be very resistant to water, to fire and to variations of temperature. It is extraordinarily hard and is suitable for use as paving material, railroad ties, etc. Its cost is about seventy-five per cent that of oak wood of commercial grades.

An excellent filling or "stuffing" for mattresses, pillows, and cushions is also made from peat and is in much demand. It is particularly advisable for use by infants and invalids, because it is so tremendously absorbent.