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Electronic Warfare and Signals Intelligence

at the Outset of World War I

The role and importance of electronic warfare and signals intelligence in modern wars of the last one-hundred years—and more—is a fascinating one. Sometimes, we forget some of the critical differences which EW and Sigint have made in modern warfare. These differences sometimes have had little to do with the tactical or strategic intelligence value of enemy communications; rather, they have pertained to the fact or act of electrical communications themselves. On occasion, the distinctions between "tactical" and "strategic" are blurred as tactical operations give rise to results of strategic proportions.

In fact, one such event constituted Great Britain's first offensive action of World War I. According to John Bulloch, in 1912 the British Committee of Imperial Defence decided that, should war break out with Germany, one of the initial British operations must be to forestall the use of German international underwater cables.[1] A secret "war reserve" standing order was issued to this effect, to be implemented posthaste once war was declared.

On 5 August 1914, His Majesty's cable ship, *Telconia*, quietly left her berth and steamed to a position off Emden. Within a few hours, five German cables running under the English Channel were grappled, lifted, and cut. A few days later, in the interest of thoroughness, *Telconia* returned to the scene, picked up the cables and reeled aboard several thousand feet—just to make sure the Germans would not be able to repair the damage.

The broad strategical consequences of this single naval tactical electronic warfare action were far-reaching, materially contributing to the eventual Allied victory: the German cables ran to Brest, France; Vigo, Spain; Tenerife, Canary Islands; and to New York City. From those points, by various routes and relays, communications could have been effected with German interests, allies, agents, and friends in the Americas, Africa, and the Near East. Since German cables in the Mediterranean Sea were British-owned, the only cable left to German use was one running from West Africa to Brazil.

Bulloch appraises the Sigint payoff of this essentially EW operation like this: "This meant that all urgent German messages, diplomatic, naval, and military, had to be sent by the powerful radio station of Naven, outside Berlin. In those days, wireless was nowhere as advanced as it is now, but it was realized that (radio) broadcasts could be intercepted, and German code messages began to pour into the Admiralty."[2]

The successes of British cryptanalysts in the Admiralty's Room 40 under Admiral William Reginald Hall have become legendary. Room 40 was staffed by about 50 expert cryptanalysts, plus support personnel, working around-the-clock shift schedules. They produced daily summaries, spot reports, and special reports based on raw collection provided by intercept and DF stations located in the British Isles at such places as Lowestoft, York, Murcar, and Lerwick. Recoveries of cipher and code books from derelict or battle-damaged German zeppelins, submarines, and

[1] John Bulloch, *M.I.5: The Origin and History of the British Counter-Espionage Service* (London: Arthur Baker, Ltd., 1962), pp. 144-145.

[2] Ibid, p. 145.

surface ships greatly aided the cryptanalytical effort in Room 40, a process dubbed "practical cryptanalysis." After the war, it was estimated that Room 40 had solved some 15,000 German naval and diplomatic communications, a very great number considering that recoveries were hand-generated. Among Room 40's preeminent achievements were its contribution to the British victory in the Battle of the Dogger Bank and the decipherment of the infamous Zimmermann Telegram.

Aside from the professional interest of this account, some contemporary significance and morals can be drawn. Among them:

• In today's terms, the Committee of Imperial Defence's strategy (giving rise to the cable ship's "naval offensive") equated to a counter-command control communications (C^3CM or C^4) operation on a grand or geopolitical scale — i.e., strategic C^3CM was planned, two years in advance, to occur at the outset of war.

• This C^3CM operation was a mere act of physical disruption, rather than "hard kill," deception, cover, or electrical disruption—all of which would have been more difficult and costly to execute — i.e., cost-effectiveness does not necessarily mean limited results.

• The *agent provocateur* was an innocuous, inglorious, noncombatant cable ship, not a warship — i.e., beware of the rear services.

• Whether or not the original planners anticipated the vast Sigint results of their operation, this is one case in which the decision to disrupt enemy communications turned out to be far more propitious than would have been a decision to remain passive, subsequently to exploit those communications. It made exploitation of a wholly new kind possible, laying a foundation for many years of successful Sigint operations.