Naval War College Review

Volume 30
Number 3 *Summer*

Article 20

1977

Electronics and Sea Power

M.G.M.W. Ellis

his analysis of the fall of Lin Piao (p. 463); his summary interpretation of the Cultural Revolution (pp. 464-468); and others. The volume ends with a carefully selected bibliography and a fairly detailed index.

ALLAN B. COLE
The Fletcher School of Law & Diplomacy

Gwynn, Julian. **The Royal Navy and North America: The Warren Papers, 1736-1752.** London: Navy Records Society, 1973. v. 118. 463pp.

Dr. Gwynn's edition of the Warren papers is an outgrowth of his Oxford D.Phil. thesis which was published in Canada under the title *The Enterprising Admiral: The Personal Fortune of Admiral Sir Peter Warren* (Montreal, 1974). The documents in this Navy Records Society volume are taken from Warren's previously unpublished, official and private correspondence.

Although Warren's abiding concern for prize money is apparent from these documents, this aspect is not stressed to the degree which it was in Dr. Gwynn's first book. In the documents, the reader will find Warren's views on strategy and force deployment, his political ambitions and the problems he faced in leadership and management of the squadron on the North American station during the War of the Austrian Succession.

This collection has been drawn from many sources in America and in England. It relates entirely to Warren's service on the North American station, most notably in the siege of Louisbourg in 1745 and subsequently as governor of the colony of Cape Breton. Geographically limited in this way, the volume will have its greatest appeal to readers in the United States and Canada. However, the general reader of 18th-century history will find Parts II, III and IV, in particular, to be such a close interchange of letters that little prior knowledge is necessary. An excellent introduction and an appendix of thumbnail sketches on each person mentioned in the documents provides a valuable overview and detailed background information. Two specially drawn maps and some well-chosen portraits and views directly complement the documents. While this correspondence does not have the literary merit which one might generally associate with the Augustan Age and "Dr. Johnson's England," there is a great appeal in a sailor's bluff, forthright manner of expression. There is much to be learned from it about 18th-century life and society.

The general reader will face one disadvantage: Many, but not all the relevant documents are printed in this volume. There are noticeable gaps in the exchange of letters. While this is a serious disadvantage to the unity of the book, it is, in this case, an advantage to the scholar. The editor has assiduously noted the letters which he has been unable to find, and in a lengthy appendix, he has listed chronologically the Warren papers of related interest which are published elsewhere. This cross-index to 16 different publications is a valuable tool, in itself, which will benefit specialists in American colonial history as well as the naval scholars for whom it is intended.

There is little doubt that this volume will stand as one of the best that the Navy Records Society has produced. In form and scholarship, it is a model of its kind.

JOHN B. HATTENDORF
Pembroke College, Oxford

Hezlet, Sir Arthur. **Electronics and Sea Power.** New York: Stein and Day, 1975. 317pp.

Sir Arthur Hezlet has expanded his subject from its original inspiration—the effect of the discovery of electromagnetic radiation on naval warfare—to include all electrical and electronic devices used at sea, including sonar. This

gives a wide basis from which to cover the impact of these technological advances on seapower, and thus the book covers a broader spectrum than its title might suggest.

Sir Arthur, therefore, starts with the introduction of the electric telegraph into naval operations in the Crimean War, when the Royal Navy used it to communicate with its squadron in the Black Sea. Almost immediately we hear the complaint of "rudder orders from the beach" with one officer signaling "Permit me to resign a command impossible to exercise at the extremity, sometimes paralyzing, of an electric wire!"

The interrelation of strategy, tactics and C^3 (command, control and communications), which are even more closely connected today, was neatly illustrated in the Spanish-American War. Both sides used the same trunk cable to Hong Kong to communicate with their forces in the Philippines and adjacent seas. The U.S. Asiatic Fleet was based at Hong Kong, while the Spaniards used an extension of the cable to Manila. After his victory at Manila, Commodore Dewey sent in a request for this extension to be declared neutral so that both sides could use it to communicate with their capitals. This was refused, so Dewey cut the cable. This meant he had to use a ship to relay traffic to and from Hong Kong, but the Spanish forces were totally isolated.

Sir Arthur moves on to the history of the invention of wireless and its naval applications. He gives proper recognition to my own electromagnetic hero, Capt. H.B. Jackson, RN, who, in the early 1890's, began experimenting with Hertzian waves to try to develop an IFF (identification) device for torpedo boats. Jackson and Marconi met in 1895 and both derived impetus from this meeting. By 1899, Jackson was back at sea, in command of H.M.S. *Juno* and supervising the successful use of wireless by three scouting ships of "Side B" in their "victory" over "Side A" in the annual Fleet Maneuvers. Marconi was in the United States to report on the America's Cup Races by wireless for the *New York Herald*, and also to give a successful demonstration of his equipment between the U.S.S. *Massachusetts* and *New York*.

Wireless received its first full war test in the Russo-Japanese War in 1904. It was the basis of the blockade of Port Arthur, as a continuous patrol of relieving Japanese cruisers was kept off the port, able to call up the main battlefleet from its base if the Russians made a move. On the other side, the Japanese ships' free use of wireless was exploited by their opponents to give early warning to their approach. Furthermore, the Russians successfully jammed the Japanese observation frequency during a bombardment. While Togo's victory at Tsushima depended to a large extent on his fleet's successful use of the new communications method, it is clear that the Russians were fully aware in this war of how an adversary's signals could be exploited—the beginning of electronic warfare.

Possibly the most important development of the early days of World War I came almost by chance, when some unusual intercepted signals were passed as a curiosity to Sir Arthur Ewing, an amateur cryptologist. British naval strategy depended on detecting the German fleet as soon as it left harbor, but there was no way to do this. Ewing, in the famous Room 40, unraveled the unusual signals as the German Navy cipher and on 14 December 1914 announced that the German battle cruisers were about to leave harbor. Beatty's battle cruisers sailed and intercepted the Germans off Dogger Bank. The lesson was immediately taken by the Grand Fleet, who introduced stringent wireless emission control procedures, and as Room 40 produced more and more authenticated intelligence, Jellicoe

based his plans almost entirely upon it, so that by the time of Jutland (1916) the Grand Fleet usually sailed *before* the High Seas Fleet in order to get into the best intercept position. The whole existence of this source was successfully kept secret, and remained so for years, in fact not being officially admitted until the 1960's.

Between the wars, there was slow but sure progress in wireless, which became known as radio, the development of fully operational sonar and the first researches into radar by the U.S., British and German Navies. Early use of radar in ships in World War II did not produce good results for the first sets to go to sea had little advantage over the eye. But at night and in restricted visibility the advantage of radar and of its users' understanding its capabilities and limitations began to tell. A realization that the battle had to be fought in the electromagnetic as well as the spatial dimensions grew.

When the *Bismarck* broke out into the Atlantic in May 1941, contact was first made by H.M.S. *Suffolk* visually, but maintained in the mist (where the *Bismarck* could not engage her) by radar. After the *Hood* was sunk, *Suffolk* lost radar contact, but later, believing the British were still shadowing, *Bismarck* transmitted a long cipher signal giving her intentions. This was immediately detected by the British shore HF/DF network, but because a staff officer did not understand radio propagation, the fix was incorrectly plotted and the Home Fleet set off in the wrong direction. Hezlet then says that the Admiralty realized the mistake and organized aircraft patrols to relocate the German battleship, but one wonders what part the Bletchley cipher-breaking establishment described in another recent book, *The Ultra Secret* by G.W. Sinterbotham, played in this. Here I touch on my only disappointment with Sir Arthur's book. He seems to have been unable to use much recently declassified information; possibly he was inhibited by the same cautious attitude which preserved the secrets of Room 40 for so long.

The epitome of the triumph of radar at sea might be the little known Battle of Empress Augusta Bay in the Pacific in November 1943. Rear Admiral Merrill's cruisers and destroyers fought off a strong Japanese force seeking to attack the transports unloading troops and material at Bougainville at night. By fighting entirely on radar and keeping at long range, the Americans overcame the Japanese advanced night-fighting tactics, which had earlier made the combination of visual lookouts, optical ranging, star-shell and searchlights so effective. However, the combination of long-range air radars and voice radio providing early warning and efficient aircraft direction, together with radar-controlled antiaircraft guns and radar-fused shells was the key to the successful air defense of the allied fleets, enabling them to operate right up to the shores of the enemy homelands by 1945. This was probably the biggest effect of the use of electromagnetic radiation on naval operations in World War II.

In discussing developments since World War II, Sir Arthur is once again inhibited by continuing security classification rules and the book tails off into a mere catalog of publicity releases. However, this does not detract from the main body of his work, which by drawing on the history of a new technology, teaches vital lessons in naval operations. All the interactions of what is now known as electronic warfare were established by the end of World War I if not before, and yet had to be relearned in World War II when the battle spread into new areas of the spectrum. This book is well worth reading by the layman, for Sir Arthur's

clear explanations of technical points and by both expert and nonexpert to gain an understanding of the fourth dimension of naval warfare—the electromagnetic and acoustic spectra.

M.G.M.W. ELLIS
Commander, Royal Navy

Jervis, Robert. **Perception and Misperception in International Relations.** Princeton: Princeton University Press, 1976. 445pp.

The concept of misperception is very much in vogue among contemporary social scientists. It has been employed to help explain any number of foreign policy decisions which proved less than successful, among which are German policy prior to the First World War, appeasement of Hitler in the 1930's and the American involvement in Indochina. Despite the apparent appeal of the concept to students of international relations there have been surprisingly few efforts to provide an adequate theoretical formulation of perception and misperception. Herein lies the utility of the Jervis book. It is an imaginative attempt to apply systematically concepts from psychology to foreign policy decisionmaking in an attempt to elucidate the processes of perception and the possible patterns of misperception.

The book is divided into three sections. The first is concerned with the context of policy and is set off by a perceptive analysis of the utility of and problems inherent in applying psychological insights to international relations. The remainder of the section is devoted to the concept of an actor's intentions, how statesmen draw inferences about the meaning of other's behavior. What is likely to make them conclude that another state has aggressive or pacific designs? This question is explored in two brief case studies of the origins of World War I and the cold war.

Part II, processes of perception, examines the influence of preexisting beliefs on perceptions. Jervis convincingly demonstrates the prevalence of premature cognitive closure or the extent to which we see what we expect to see regardless of the reality. He suggests a variety of conditions that encourage such misperception, among them the concerns of policymakers, the perspectives of leaders, the distribution of information within a government and time lags.

The remainder of the book is a catalog of common misperceptions. Jervis asserts that most misperceptions can be attributed to three generic and chronic problems: Overestimating the extent to which other's actions are centrally directed and coordinated; overestimating one's own importance as an influence or target; and the influence of a policymaker's own desires and fears upon his perceptions. Within these categories Jervis develops a number of hypotheses. One of the most interesting relates to wishful thinking, the extent to which policymakers are insensitive to evidence that suggests an undesired outcome is likely. He finds that the evidence does not support the conventional wisdom that policymakers are overly prone to wishful thinking. Statesmen sometimes see what they want to see but are just as likely to perceive imaginary dangers. The $64 question here is, of course, the circumstances in which perception will be skewed in one direction or the other. Jervis is unable to provide us with many clues.

This failure is perhaps the major drawback to the book. His analysis helps us to understand past decisions, cases where the nature and direction of misperception are known, but offers only limited guidance in avoiding future misperceptions. Such guidance consists in sensitizing scholars and policymakers to the kinds of misperceptions that exist and the kinds of situations in which misperceptions are likely to occur. This in itself is a major contribution and