

Naval War College Review

Volume 15
Number 3 *April*

Article 1

1962

April 1962 Full Issue

The U.S. Naval War College

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Naval War College, The U.S. (1962) "April 1962 Full Issue," *Naval War College Review*: Vol. 15 : No. 3 , Article 1.
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NAVAL WAR COLLEGE REVIEW

VOL. XIV NO. 7

APRIL, 1962

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NAVAL WAR COLLEGE
REVIEW

Issued Monthly
U.S. Naval War College
Newport, R. I.

NAVAL WAR COLLEGE

EXTENSION COURSES

General Order Number 325 of 6 October 1884, established the Naval War College at Newport, Rhode Island, as a "college for an advanced course of professional study for naval officers." It soon became apparent that the resident courses could not educate the numbers of officers which the service required. In order to overcome this deficiency and extend as much professional education as possible to all officers of the Navy, General Order Number 89 issued 1 April 1914, authorized the conduct of professional courses by correspondence. This was the beginning of the present Extension Education Department of the Naval War College. From the beginning the aim of this Department was to provide as many as possible of the educational benefits of the College to those officers of the naval service not in residence. To this end the extension courses are continually reviewed and compared with the resident courses. The most recent revisions were made during calendar year 1962. Listed below are the courses currently available.

NATIONAL AND INTERNATIONAL SECURITY ORGANIZATION.
Two installments, approximately 60 study hours.

MILITARY PLANNING.
Two installments, 60 hours.

COMMAND LOGISTICS.
Three installments, 60 hours.

NAVAL OPERATIONS.
Two installments, 60 hours.

INTERNATIONAL LAW.
Six installments, 250 hours.

INTERNATIONAL RELATIONS.

Six installments, 250 hours.

READING COURSE, INTERNATIONAL LAW.

One installment, 50 hours.

READING COURSE, INTERNATIONAL RELATIONS.

One installment, 50 hours.

STRATEGIC PLANNING.

Four installments, 120 hours.

Any officer of the U.S. armed services, regular or reserve, active or inactive, above the grade of ensign (or second lieutenant) is eligible to enroll in any of the courses.

Officers on active duty should submit their applications for enrollment to the Extension Education Department, Naval War College, Newport, Rhode Island, via their Commanding Officer.

Officers not on active duty should submit their applications for enrollment to the same address via the District Commandant or other command carrying their records.

Requests for detailed information on any of the courses should be made by informal letter direct to the Extension Education Department, Naval War College, Newport, Rhode Island.

PRIOR TO APPLICATION CONSULT BUPERSINST 1500.44

THE MILITARY ASPECTS OF THE NATIONAL ESTIMATE

A lecture delivered
at the Naval War College
6 February 1962

by

Vice Admiral Chester C. Wood, U.S. Navy (Ret.)

I am, of course, delighted to be here with you today for a wide variety of reasons, not the least of which is the fact that I thoroughly like war colleges. I thoroughly believe in war colleges, and I thoroughly enjoy being with war college people.

Furthermore, I must confess that from a purely sentimental point of view, I am delighted to be here in Newport. For although I never had the privilege nor distinction of being a student here, I did spend all of my summers as a kid on Prudence Island, only five or six miles from here, and I do love to come back to this part of the world.

And among my clearest recollections of that period are those of our frequent visits to Newport—usually to get haircuts, there having been no barbers on Prudence Island in those days. And on those visits, our first sight of Newport on coming down the bay and rounding Gould Island, would be this great massive stone structure, dominating Coasters Harbor Island, in fact dominating the entire harbor landscape. We kids knew that this was the War College because we knew that it looked exactly as a war college should look. And it still does.

I most sincerely congratulate you on having been chosen to come here, and I unashamedly envy you. I would like to turn back the clock. But short of that

highly improbable occurrence, I am very grateful for this visit.

Now a story is told about an enthusiastic golfer who walked toward the first tee of his golf club one day, and as he approached it he saw another player who was apparently getting ready to drive off from a spot about five feet in front of the tee markers. Our friend thought that this was a terrible thing to do, and being a man of impulse, he went charging up to the player on the tee and proceeded to bowl him out for lousy sportsmanship, inexcusable ignorance of the game and shockingly bad manners.

The other poor man stood and listened in silence, and then he, too, got mad. "Look," he said, "I thoroughly resent your attitude. In the first place, I've never been introduced to you and God knows I don't want to be. In the second place, I've played golf for over twenty years and no one has ever questioned my golf manners or my ethics. And in the third place, this is my second shot."

In the same general sense, this is not my first, nor even my second experience at this business of the national estimate. In fact, I have had more than enough experience at it to know that, under no circumstances, should I, or anyone else in my general category, attempt to appear before you today as an expert, nor as a learned lecturer, nor even as a consultant. On the contrary, I know that my only possible role is that of an interested colleague, in finding out where we and our Allies stand militarily in relation to the Soviet Union and its Allies, and then, in finding out what we should do about it.

Now, with only a trace of facetiousness, it seems to me that this task should not prove at all difficult for you in the light of the fact that this same task

is apparently being successfully accomplished each day by several hundred assorted columnists, TV commentators, college professors and members of the minority political party in the Congress. I have every reason to believe that your efforts will be no less successful than theirs.

Like these other practitioners, I think that you will find that the job breaks down into three rather natural elements: First, getting together the factual information which will make up the hard core of your estimate. Second, arriving at the philosophical approach with which you will analyze and evaluate the factual information. And third, putting the other two elements together in lucid and presentable form.

In dealing with the first element—that of gathering your facts—you are going to find out that you know far more about this subject than you think you do. In addition, there is an inexhaustible supply of information in your magnificent library. There is certainly nothing that I could add to that.

The third element—that of combining fact with philosophy—is a mechanical job of presentation, largely one of writing in a style which is clear, logical and brief. Your competence, I feel sure, is more than adequate.

But on the second element of your task—the philosophic approach—there are, perhaps, a few things which I can say to advantage and I will limit myself to these. For in this approach, we are not dealing with current facts and figures, nor with fast-changing procedures, but on the contrary, we are dealing with timeless considerations based on the raw material of history. This is the stuff which one generation has traditionally passed on to the next with the optimistic hope that the lessons learned will be taken to heart—as, of course, they *never* are. But in any event, it is passed on with neither obligation nor

apology, and that is just as it should be. In that sense, let us turn more directly to your task. .

"The Military Aspects of the National Estimate." That is our topic—and your task.

Now granted that the words *national estimate* speak for themselves, and I am sure that they do to you, let us look more carefully at the words *military aspects*, or to what would be at least adequate paraphrases of those words: *military strengths and weaknesses, military advantages and disadvantages, or the military point of view*. What do we mean, for example, when we refer to *military strength* in a philosophical vein?

Well, I used to see military strength during those visits to Newport which I mentioned a few moments ago. I saw it in this War College building itself—it looked the part. I also saw it in the ships of the Atlantic Fleet during its annual visit—a long line of fifteen to twenty battleships which extended along the Jamestown shore from the ferry lane to the northern tip of Conanicut, together with all of the attendant smaller craft. This fleet was the successor to the Great White Fleet which Theodore Roosevelt had sent on its cruise around the world as the symbol of the new role of the United States in world affairs. Here was military strength in its most naked and least subtle form.

I also saw military strength in those days, fifty years ago, in the liberty parties which came ashore on Prudence Island from the ships anchored nearby. These liberty parties were military strength, even though every single sailor would make a beeline, almost at a dogtrot, for the only inn on the island that held a liquor license. And I would certainly see military strength each day at sundown when a squad of marines would come ashore to round up the drunks—thereby getting the situation well in hand.

Military strength also existed a hundred and fifty years ago in the little village of Stonington in Connecticut, where I now live. For there, in 1814, a landing party from a British squadron came ashore to burn the town and the shipping in the harbor. The party advanced without opposition for about a quarter of a mile inland, but then it was so fiercely attacked by a band of local militia and so badly mauled that it retreated to the boats and off to the ships as fast as it could go. It was the military strength of that little town which saved it from tragedy and helped to win the War of 1812. We have eloquent speeches about all of this, every 4th of July.

We also talk about a small group of farmers who stood at a bridge near Concord in the Spring of 1775 and badly beat up a platoon of redcoated Hessians. Those farmers were military strength. And so was Washington's army in its brilliant performance at Trenton. And so was it during the cruel, frustrating hardships of Valley Forge.

American independence was not won through the dumping of tea in Boston Harbor, nor through the eloquent tones of the Declaration of Independence, and certainly not through the benign generosity of King George III. On the contrary, that independence was achieved solely because the thirteen American colonies, and their Allies, were militarily strong enough to defeat a militarily inferior British force. It was as simple as that.

There can be *no* doubt that we Americans know and fully understand the national element of military strength. We have used it with great effectiveness—just as we will again, should that prove necessary. For we also fully understand that it is the military strength of the Soviet Union which has been the true basis of fear and concern, not only in the opposing world, but among the people of the Soviet Union itself and the people of its satellites. For it is

clearly *not* the communist ideology which threatens world destruction, nor the economic competition, nor the possible Soviet leadership of now uncommitted peoples. These things we can take in confident stride, just as we can take the mere boorish behavior of Mr. Khrushchev with embarrassed regret. But when that boorish and irrational behavior is linked to men who have unrestricted control of bombs and bombers, great hordes of highly trained soldiers and hundreds of long-range missiles, then our confident stride may well be broken, and our concern may well be real—as it is. By the same token, it is undoubtedly our military strength and that alone, which gives concern to the men in the Kremlin.

And so, in looking back over the world's history as far as one cares to look, one is bound to come to the conclusion, it seems to me, that the traditional role of military strength has been that of a court of final appeal. For aggressor nations it has been the final choice when threats and bluffs and sheer terror have failed to produce a desired end. In resisting aggression, it has been the court of last resort for nations brave enough and resourceful enough to use it—the Belgium of World War I, and the Hungary of 1957.

During the hundreds of years that this has been substantially true, many hopeful efforts have been made to create a higher law among nations than that of the law of the jungle—the World Court, the League of Nations, the wars to end all wars, the United Nations, and so on. Some day, perhaps, that hope may be realized. But for those of us who live today, the path of prudence is the path of realism.

This, then, is the commodity with which you will deal as you build up the military aspects of your national estimate.

But that is not all that can be said about military strength within the context of our discussion. Far from it. It has layer upon layer of factors, considerations and aspects which you will be exploring for as long as you stay in this business of military planning. And, from among many likely such layers, I have chosen but three to briefly discuss. These are not, necessarily, the most important, but to me, they have always been important.

The first of these I have entitled in the form of a question "What kind of war?"

Now military power does not, and cannot, exist in a vacuum of purpose; it is far too expensive for that. It must have purpose, and preferably it must have a purpose which can best be defined by the answer to the practical question: What kind of a war must we be able to fight tomorrow, or next month, or next year?

In the very earliest of days, I suppose that there were only two possible answers—aggressive war or defensive war. To these were added as the years went on, land war, naval war, feudal war, and civil war. When Hannibal decided to attack Rome through the Alps, the phrase *mountain war* joined the lexicon and elephants were added to standard logistic forces.

As man became more sophisticated in a political sense, the more complex became his national aspirations, and hence the more complex became his tools of war. And finally, the tools of war became so complex that they had to be created not only for specific types of war, but sometimes for a specific war with a specific enemy.

Thus it is, that we now have weapons for cold war, nuclear war and conventional war. We have weapons for general war and for limited war. We may have limited war with conventional weapons and we may have

limited war with nuclear weapons. We have first-strike capabilities and second-strike capabilities. We have several different types and classes of deterrence. We have means for megatons and for megadeaths.

We have, for the first time in history, all of the trappings of nuclear war. We also have a deeply disturbing philosophical problem concerning the usage of these trappings—all mixed up with the words *red* and *dead*. This problem, of course, could well be the topic of an entire series of lectures at a War College, and perhaps it will be. But it must be, I feel, at least a footnote in this one lecture. For that purpose I have chosen what seems to me to be a middle ground of such philosophical thought and I pass it on to you for what it may be worth. It came from a recent column by Walter Lippman. This is it:

. . . In cold blood, no government can, no government will start a nuclear war with an equally great power. Only a moral idiot would press the button.

. . . Nevertheless, though a nuclear war would be lunacy, and is unlikely, it is an ever-present possibility. There is a line of intolerable provocation beyond which the reactions are uncontrollable.

His formula for avoiding such irrational use of nuclear war as an instrument of national policy is as follows:

This being the nuclear age, it is the paramount rule of international politics that a great nuclear power must not put another great nuclear power in a position where it must choose between suicide and surrender. (quoted in *Time*, September 29, 1961.)

In that latter statement, even though Mr. Lippman is speaking of political, rather than military actions, he is clearly defining a basic consideration of military policy, and as such, of paramount interest to you.

Mr. Lippman is also referring, in an indirect manner, it seems to me, to the continuing utility of conventional war as a rational instrument of policy. But here, once again, you will find a difficult philosophical problem in matching a simple course of action with the complexities of any given situation at any given time.

As an example, let us consider for a moment what went on in Indo-China some ten years ago. What kind of war was it? Was it a colonial war or was it an imperialistic war? Was it a war of aggression or was it a defensive war? Was it a military war or an ideological war or an economic war? Was it a static war or a war of movement? Was it a major war, or was it a local war—a peripheral war, a brush fire or a police action? Was it a jungle war or a guerrilla war? If the United States had gotten into it, would she have been fighting a war, or would she have been merely intervening? And so on.

The answer, of course, is that what went on in Indo-China was some of these things to some people, and other things to other people. It all depended on where you sat. To the Frenchman sitting in a sidewalk cafe in Paris it was a colonial war. But to the Vietminh sniper sitting in the top of a tree it was an imperialistic war. To most of the Western world it became a war of communist aggression. To the members of the Foreign Legion who were fighting there it was a jungle war—a filthy jungle war to be exact. But to the Indo-Chinese it was definitely not a jungle war. For the phrase *jungle war* meant precisely nothing to them—the jungle was all that they knew of the world.

And so, what went on in Indo-China was indisputably *war*. All would agree on that, but probably the only adjective to which all parties to the conflict would agree is the simple word *shooting*. And yet, by common usage, the word *shooting* is not now, necessarily, associated with the word *war*, although it certainly was in Clausewitz's dictionary, but that is no longer being printed.

What kind of war? This is the first question which you must ask yourselves, and it is the first question which you yourselves must answer. The answer will not be easy to find, nor will the answer that you find be a simple one.

Now the second area of interest which I have chosen to talk about may best be entitled, I think, "The Hazards of Military Estimation." And the best way to define what I am talking about is to tell you a story which I heard a long time ago, but which, to me, is just as delightful today as it ever was. This is the story.

Shortly after Israel became a nation in 1947, it went into a very serious economic crisis which threatened its very existence. At its height of intensity, the Prime Minister called an emergency session of the Cabinet, stated the seriousness of the case, and then asked each member for recommendations as to specific action to be taken. None of the suggestions were of any real interest, until one cabinet member suggested that Israel immediately declare war on Great Britain. This suggestion brought forth nothing but astonishment until its sponsor went on to explain as follows:

"It used to be," he said, "that the spoils of war go to the victor. But no more. Today, the spoils of war go to the vanquished. Look at Germany and look at Japan.

They were not the victors in the last war, but they are doing very well indeed on all of those fine dollars which Uncle Sam is giving them. This is what we should do. We should follow their example. We should declare war on Great Britain. Great Britain will beat us badly and quickly. And then, because she is the victor, and we are the vanquished, Great Britain will have to pay us lots of money so we, too, can live very good indeed. Why not?"

With this explanation, all of the other members became enthusiastic, and they, too, said, "Why not?" That is, all except one little man who sat near the junior end of the table and who obviously disapproved, although he seemed somewhat loath to explain his reasons. But finally, the Prime Minister demanded an explanation. The little man got up and said in a shy, diffident manner, "I agree with all that is said about the plan. This is a wonderful plan, and our troubles would soon be over. We would be very rich. But what I am wondering is: Suppose that we should defeat Great Britain?"

There, as you see, was a man who fully understood the hazards of military estimation. And I would hope that you, as you go about making your national estimate, will understand those hazards equally well. For we Americans have had no corner on wisdom nor judgment in this connection. In fact, as you well know, we have made some horrible boners during the years gone by.

One of these boners is referred to in a recent article in the *Atlantic Monthly* which starts off with these words of the author, "I lunched with an old friend at the University Club in New York shortly after Pearl Harbor and I remember his saying to me as we crossed the threshold, 'On this very spot there should be a plaque reading: Here, the evening of December 6, 1941, an American admiral proclaimed that

the Japanese could never take us by surprise." (Weeks in *Atlantic Monthly*, December 1961.) The author then goes on to say in essence, ". . . The overconfidence of the American fighting man, and the inadequacy of his weapons . . . have never been better demonstrated."

But if the tactical surprise achieved by the Japanese at Pearl Harbor is cited as a horrible example of American ineptitude in military estimation, then the attack itself offers an equally horrible example of Japanese ineptitude in estimating its overall effects. For what they had hoped to achieve was merely a simple knockout blow against the major portion of our battleship strength. This they did achieve, but in so doing, they so enraged the American people that the eventual outcome of the war would never be in doubt.

Something of the same sort had happened in Europe in early July of 1870 when all seemed quiet along the diplomatic front. Ten days later France and Germany were mobilizing for war. Two months later, half of the largest French army assembled since Waterloo had been ignominiously defeated at Sedan, and two months after that an abject treaty of surrender had been signed by the French and largely because they had been shortsighted, arrogant and overconfident in peace, and grossly incompetent in war.

There are many other equally apt examples of just such misestimating: The first battle of Bull Run; Germany twice defeated in major wars which she would never had started had she not been fully confident of winning; the long trek of the Russian Fleet in 1905 to its utter defeat by the Japanese in the Straits of Tsushima. There are many more.

In most cases the inaccuracies revealed were the result of technical mistakes—lack of information or misinterpretation. But in others, the errors of estimation may be traced to outside forces which lay beyond the control of the strictly military appraisal.

An excellent example of this situation, so it now appears, has existed for several years in the case of the celebrated *missile gap*, the story of whose birth, growth and early death, in the words of Hanson Baldwin, "had an Alice-in-Wonderland quality about it which could flourish only in a democracy." (*New York Times*, November 26, 1961.) Here was a case in which serious military estimation became embroiled in partisan politics and service rivalries to an extent truly damaging to our national prestige.

Now in pondering stories such as these, it is quite natural that one should cast about for alternative techniques and improved procedures. I am sure that you will. And I would hope that in this process, you would seek to improve the method whereby an enlightened human intelligence is applied to the purely mechanical factor. If the French planners of 1870 had applied their own intelligence to the mathematical factors of German military strength, rather than being blinded by the sheer tinsel of their own military setup, there would have been no war. If the American planners before Pearl Harbor had paid as much attention to the human qualities of Japanese naval commanders in the light of history, as they did to the number of existing Japanese ships and the number of guns they mounted, there might never have been a Pearl Harbor. As for the missile gap, I gladly leave that to you. But no matter how well the process may be refined, people such as you will always be faced with the hazards of military estimation. They are very real.

And now to the third and the last of my little discussions—this one on "Our Sorry Record of Military Preparedness."

Now I think it is fair to say that any honest, loyal-hearted American who reads the history of our

military combat will feel the thrill of patriotism, pride and admiration. But, the same individual in reading the history of our military policy—between wars—will end up with a feeling of disgust and disillusionment.

Why is this? Why is it that a people who can be as courageous, as self-sacrificing, and as thorough as the American people in fighting their wars, are so utterly inept in managing their military affairs in times of peace? Although the answer to that question should probably be complex, I do not believe that it is. I believe that the answer lies in the very simple fact that we Americans loathe war and all things pertaining to it with such a deep-seated passion that we cannot bring ourselves to ever admit that war could happen to us until it has actually happened and we are literally frightened into action.

How else can we explain the fact that in 1915, with war raging in Europe, and our early involvement clearly possible, the President issued direct orders against any form of war planning in the War and Navy Departments? How else do we explain the fact that in the Summer of 1941, only a few months before Pearl Harbor, the extension of the military conscription act was passed in the House of Representatives by a margin of only one vote?

At one point during the 1880's, the Congress refused to appropriate any money for Army pay over a period of two years, and this at a time when combat units were actively engaged against the Indians in the West. The lack of preparedness for the Spanish-American War in 1898 was so flagrant that troops went to Cuba in their heavy woolen winter uniforms, and so scandalous in other respects that a major reorganization of the War Department and of the Army quickly followed. The story of our ups and downs of military posture since World War II is one that you know only too well.

Now these foregoing remarks—largely historical in nature—have had to do with the material aspects of military preparedness, principally weapons and trained men to use them. In this sense, the remarks are probably less apt today than they have been in the past. However, to the dimension of preparedness in a material sense, there has now been added a second dimension, that of moral or psychological preparedness to use those aspects of military strength which we do have. And in today's world climate, this could be far more important than the first. This, of course, is true with regard to nuclear warfare itself, and specifically, with regard to the use of a nuclear capability in waging the cold war. You will remember, for example, that Mr. Kennedy's most important goal at the outset of last year's Berlin crisis was to make Mr. Khrushchev believe that the great mass of American people were willing to back our stand with a moral preparedness to use nuclear bombs if need be. It was only after intensive efforts by many people that Mr. Khrushchev seemed to get the word and thereafter the crisis visibly eased. The price of moral preparedness had paid off.

Conversely, it was our apparent lack of moral preparedness to use our conventional weapons in Laos and in Cuba which cost Mr. Kennedy so dearly in domestic support, and which cost the country dearly in prestige.

Military strength is an indispensable tool of national policy, but military strength can be of no greater value than the use to which it is put. Military strength is, therefore, not to be measured solely in terms of such mechanical units as divisions, missiles, planes and ships. To these measurements must be added those of national courage, national sense of sacrifice and national moral fibre.

This means, in turn, that the people of a nation—any kind of a nation, from the most liberal democracy,

to the most rigid dictatorship—inevitably make the final decisions on war and peace. For no nation can fight a war for which the people are not ready. Despite the best efforts of President Roosevelt in leading the nation to a more active role in World War II, the people were *not* ready for war on December 6, 1941, but they were ready at 2:30 p.m. Eastern Standard Time, December 7, 1941. In between, the American people had made the decision which only they could make.

Let us hope that the sorry record of the United States in its military preparedness in the past, is one which you, in the years to come, can help to change. Military unpreparedness is an ostrichlike posture which only the ostriches can now afford. So much for that.

Now I feel sure that it is obvious to you, as it is to me, that there is no single theme, nor point of view which runs through those brief discussions. This, I think, is due to no sheer coincidence, nor to any oversight of mine. For I do not believe that there is any single thread of thought which holds those particular aspects together, nor would there be with a totally different, but similar choice of aspects.

In short, I do not believe that there is any single theme, or summarizing factor of this whole subject of national military strength, which would be of any significant help to you in your present task. But because of this very fact, I *do* believe that there is *one* single conclusion which one can draw, and which should be of interest to you. It is this: The world has long since passed the point-of-no-return to that simple and stodgy and stable condition of a generation ago when the President of the United States could afford to take a nap after lunch every day and follow it with a drive through the park.

This delightfully comfortable atmosphere has been almost literally blown out of the window by an exploding world population, by a violent shrinking of the size of the world through communication technocracy, and finally by man's own creation of a mammoth powder keg on which he has sentenced himself to sit. In the place of that long-gone comfortable atmosphere, there has been put one of harsh aggressiveness, of strident dissatisfaction, and of conflicting issues. These forces tend to make ridiculous any thought of over-all and lasting peace as we formerly used the term. There will simply be more war, or less war, somewhere in the world. Generally speaking, there will be no correct solutions to world affairs, nor will there be incorrect solutions. There will simply be solutions which are more acceptable than others, or less unacceptable.

This is the environment in which your military planning will be done from here on out. And for men with precise mathematical minds, such as many of you, this is not a comfortable environment. But becoming used to it, and learning to work well within it—if you have not already done so—is a vital part of your job, and one which I feel sure you will do as well as the others.

In so doing, you will have learned to blend the science of war with the art of war—the cold statistical fact with the warm-blooded flow of philosophical thought. And this will be good. For this talent, held by men such as you, is one of the greatest hopes for our nation in the difficult years ahead.

BIOGRAPHIC SKETCH

Vice Admiral Chester C. Wood, U.S. Navy (Ret.)

Present Position: Provost, Mitchel College, Long Island University, with additional duty as Vice President for Business and Development.

Schools:

Naval Academy, 1924

U.S. Naval Postgraduate School, Annapolis, 1930

Harvard University, 1930-31

National War College, 1948

Career Highlights:

Prior to World War II he served in all three Fleets in existence at that time, the Atlantic, Pacific and Asiatic. This service was carried out in practically every type of surface ship, with cruiser and destroyer service predominating. From 1939-41 Admiral Wood was on duty at the U.S. Naval Academy, first as Aide to Superintendent then as Secretary of the Academic Board. As such, he had staff cognizance over all matters pertaining to academic work of the Academy, including curricula, faculty, method of instruction, entrances, student performance, and so on.

During the first year of the war he commanded the destroyer *Bristol* in the North Atlantic and spent the second year as Operations Officer and later Chief of Staff to the American Admiral in command of all our forces in the North Atlantic. In connection with this latter work, he was awarded the Legion of Merit.

During the third year of the war Admiral Wood was Assistant Naval Aide to President Roosevelt and as such, was in charge of the Map Room in the White House

and accompanied the President on several of his war-time trips. The fourth year of the war was spent as a destroyer squadron commander in the Pacific. For service in this capacity during the Okinawa Campaign he was awarded the Navy Cross and for service in connection with the Japanese surrender he was awarded the Commendation Medal.

Since the war he has commanded the cruisers *Fargo* and *Albany*; has served on the Staff of both the Commander in Chief, Atlantic and Commander in Chief of the European Command; he has commanded a destroyer flotilla and the Cruiser-Destroyer Force of the Pacific Fleet. From 1953-55 he served as Deputy Commandant, National War College. His last active duty was as Commandant of the Third Naval District.

In addition to the decorations mentioned above, Admiral Wood has been awarded the Legion of Honor with the rank of Chevalier and the Croix de Guerre with Palm by the Government of France.

OCEANOGRAPHY AND NAVAL WARFARE

A lecture delivered
at the Naval War College
8 January 1962

by

Rear Admiral Edward C. Stephan, U.S. Navy

In addition to being the Hydrographer in Command as of the first of January, I am the Oceanographer of the Navy. How impressive can you be? I recognize that when this is all over, there is a question and answer period, and having been given one scientific title as Hydrographer, and another as Oceanographer, I want to protect my flanks for just a minute. I didn't know where the Hydrographic Office was when I reported to command it a year and a half ago and, as I told you, I have just now become oceanographer.

I am going to speak on the administrative and organizational problems of oceanography, not the science of it. If, when I'm through, you want to ask me questions about the administration and organization of the oceanographic programs of the Navy, and of the country, I'll try to answer them. If you want to ask me questions about the scientific aspects, I have a recorder with me which will take down your questions, I'll take them back to the scientists, and I'll send you an answer next week.

In the course of my discussion today, I will, first of all, define two or three technical terms that I intend to use relating to oceanography. I will discuss the importance of oceanography from a military, a political, and an economic point of view; then I will discuss the organization of oceanography, nationally and within the Navy. Next I will point to

some problem areas. Finally, in the hope that you will be sold, I will conclude with what you can do to help.

Now to my definitions. When I came into the hydrographic and oceanographic business, I was rather thoroughly confused about the distinction between hydrography and oceanography. In order to clear it in my own mind, I have had this slide made. If you consider the oceans of the world as a bucket of sea water, which they are, hydrography is the shape of the bucket. Hydrography is an old science which has been studied for the many centuries since man found it necessary to keep his ships from going aground. Thus, hydrography's first interest and emphasis was in the coastal areas where most ships went aground. It also works to some extent out into the ocean.

Oceanography is a very much broader subject. It includes the whole bucket, the contents and the shape. It has for its domain the geological aspects of the earth that underlie the ocean, all that is in the ocean—animal, mineral, and vegetable—and the atmosphere that overlies the ocean. So oceanography is a very broad subject, of which hydrography, the inner form of the bucket, is a very important part.

In hydrography at the Hydrographic Office, we have been self-contained. It was not difficult to go out with surveying ships and survey the bottom of the ocean—that part on which ships would go aground—come back in, reduce these survey data to charts and other navigational publications, and turn out an end product in the form of charts and publications to serve the purpose of safe navigation at sea. This is our statutory requirement and we have been fulfilling it for some 130 years. If this was all of our total requirement, we would probably be a declining rather than a growing agency.

In oceanography, the Hydrographic Office is by no means so self-contained. As we go out to survey and

collect data on the oceans, we are not thereby turning out an end product. We are turning out data which means nothing until pure and applied research scientists wrap their brains around it and come up with understanding of the ocean. Out of this grow operational concepts and weapon systems, means to exploit our understanding of the ocean. Before we get an end product from oceanography, the data has to be handled through the pure research laboratories of the Office of Naval Research, the applied research laboratories of the Bureau of Ships and the Bureau of Weapons, probably through the fleet in the review of operational concepts, and through industry in the development of weapon systems to exploit this knowledge of the ocean.

We would be fortunate if we had such a term as *oceanology*, to augment oceanography and to embrace this whole broad subject from data-collection to the final exploitation of knowledge. As we have been with hydrography, the Hydrographic Office is again in the business of taking data from the ocean and putting it into easily usable form for the scientific community.

Now, I would like to point out a few of the more obvious military advantages in knowledge of the ocean. I don't have to go into much detail here. These military advantages are very obvious to everyone here, whether they be Army, Navy, Air Force, Marine or civilian. I would like to suggest to you that as we learn more of the ocean, advantages of this knowledge that are not dreamed of today will become apparent to us. The important thing is that we learn more of the ocean.

A current application of oceanography is in the ASWEPS program. ASWEPS stands for Anti-submarine Warfare Environmental Prediction System. In ASWEPS, we are, in effect, making a weather map of the ocean below the surface to go with our older better established weather maps of the atmosphere above the

surface. With this understanding of the environment in anti-submarine warfare, we are able to predict those areas where the operating conditions and environment will be favorable to the submarine and, where conversely, it will be favorable to the anti-submarine element. This system began with a test effort at the Hydrographic Office and is due to be fully operational within the fleet in the near future. Already it is producing real guidance to fleet commanders on how to best employ their anti-submarine elements. The Anti-submarine Weapons Environmental Prediction System is collected on two forms of network.

The first is a broad gross system in which we treat the ocean as a whole and use everything that is available to us on a continuing basis to collect knowledge of the ocean. We collect this information from oceanographic aircraft, from weather stations, from lightships, from such transients as are available to us, from our DER's and YAGR's on station, from Texas Towers, and from ocean buoys. These feed in a continuous flow of weather-reporting systems into operational control centers where a gross picture of ocean weather for anti-submarine warfare is put together and distributed to the fleet commanders. Backing this up for finer details, we have a mobile net. The mobile net is built up around an anti-submarine task force at sea and consists of carriers, destroyers, helicopters operating either from the carriers or the destroyers, the fixed wing aircraft, and the aircraft bathythermographs. This is a more precise application in a smaller area of the same system. It is paying dividends with information on what's going on in the ocean and how it applies to anti-submarine efforts. We are not as well along as I would like to be on this, but we are progressing rapidly. As these programs develop, the importance of this weather map to submarine and anti-submarine operations will certainly increase.

Another application of oceanography to military, and also to economic life, is in the ship-routing program. Here, a simple knowledge of ocean weather, wave structure, and current, is enabling us to route our MSTS ships, our combatant ships in transit from the east coast to the Mediterranean and back, and our merchant fleet, in such a way as to get them to their destination with the least fuel consumption, with the least storm damage, and with greater comfort to the passenger, whether he be military or civilian. This is a growing economic business. It's being started at the Hydrographic Office; it is continuing in the Fleet Weather Service, and it is being done on a large scale commercially. It is estimated that our savings, as a result of ship routing, are something over 2-1/2 million dollars a year. These savings derive from a reduction in sailing days and from a reduction in ship and cargo damage effected by better routing.

Another obvious military application of oceanography is in the anti-submarine sonar business. As you are aware, the present-day sonar is going to new methods which extend the range of detection. It is important to know the shape of the bottom in areas where these sonars will operate. Later, I will come to some rather unhappy information on how little we know about the shape of the bottom. The solution to the exploitation of the modern sonar obviously lies in a greater knowledge of the ocean.

In carrier strike operations again, a combination of ASW and ship routing is of utmost importance. It is necessary not only to route the carriers into areas of maximum anti-submarine capability for the supporting forces which are determined by the most favorable anti-submarine operating conditions which in turn are dependent on a maximum knowledge of the ocean, but it is also necessary to route the carriers into surface conditions which facilitate and do not impede the launching and recovery of aircraft. In fact, there is no aspect of naval operations where knowledge of the

ocean is not a key aspect in the success or failure of these operations.

Beyond the military, there are other great benefits to be derived from the knowledge of the ocean. In the economic area, the oceans provide perhaps the greatest of all resources for minerals, food, and oil. As a practical matter, they are almost untouched. Modern fishing scarcely touches the fish harvest that is available in the ocean. Such small off-shore oil resources as have been developed by the more progressive oil companies have barely skimmed the surface of the oil that is available. The chemical resources of the ocean, the fresh water resources have barely been touched.

We are fortunate in the Navy to be identified in a scientific endeavor which pays off in other than military ways. I think that as this cold war continues, and as the taxpayer pays the cost, he will be looking for some dividend beyond the military potential to stand off-shore with the power of destruction if it is needed.

Oceanography is a particularly useful thing and the Navy is particularly fortunate to have it. As we develop it, without for one minute overlooking the military requirements of oceanography, we are in a position to pay off to the taxpayer and to the country a dividend in economic development. Equally, because of its economic importance, we are able to make a political contribution in the cold war. Underdeveloped countries around the world, whether they be in Southeast Asia or in Africa, or to some extent in our own hemisphere in South America, are oceanic countries. We can contribute in behalf of our cold war effort to the political, economic, and moral development of these countries when we make a contribution to their food resources through oceanography. Prior to coming to my present job, I visited many of the emerging countries of Africa as Commander of the South Atlantic

Force. All of those countries are short on proteins, all of them are short on food of all sorts, yet off their coasts are some of the great fisheries of the world. The Navy has an opportunity to make itself useful to these countries and to our own State Department through the ability to be in those countries and in their waters with a view to contributing to their economic and political development. For example, in the last AMITY cruise which was made by a task force of naval vessels to the countries around the Gulf of Guinea on the west coast of Africa, we were fortunate to have a representative of the United States Bureau of Commercial Fisheries aboard. He was aboard to learn more about the biological and thermal nature of the ocean in the Gulf of Guinea. As he acquired this knowledge, he got a better understanding of where the fish were, why they were there, and at what depth they should be fished. Unfortunately, this was not sufficiently publicized and, as a result of communist pressure, our task force was asked to leave Conakry in Guinea. Had this been publicized and had the presence of this task force been identified, not with the military power struggle for the affections and support of these people, but with the much more personal task of providing resources to them, it would have been far more difficult for the communists to have built up the propaganda which led to the request for this force to leave. This is a real opportunity for the Navy to help our State Department in the front line of the cold war, to help our own economy in development and, at the same time, not for one moment lose the advantage of getting the military oceanographic knowledge that we need. But there is nothing inconsistent with the knowledge of the thermal layer that tells you that fish are here or not here, and the knowledge of the thermal layer that tells you that this is or is not a good or bad anti-submarine operating area and what you should do about it.

Another political and economic opportunity lies in South America. In the South American countries over

the years, navies have been justified on small local rivalries. Thus, you find around the South American continent, the jealousies, rivalries, and suspicions between Venezuela and Colombia, between Colombia and Ecuador, between Ecuador and Peru, Peru and Chile, Chile and Argentina, Argentina and Uruguay, Uruguay and Brazil.

Now these rivalries are the basis for those navies, and we need those navies to be in existence. However, these rivalries are fading. It is hard to visualize in the present situation, a war between Argentina and Chile, or between Chile and Peru. It is getting more difficult for those countries to support their navies on the basis of their rivalries. To complicate that problem, during the past two years we have succeeded in getting the South American navies to operate together with our forces. Politically this is just about as harmful to their budgets as it would be to ours if we were holding exercise with the Russians to defend ourselves collectively against Canada. This makes it hard for them to justify navies. And this is beginning to hurt in South America, and the damage is being worsened by many of the people in our Congress who oppose military assistance to the South American countries on the ground that it hurts their economy and that the building up of their economy is the most important thing that can happen in South America. There is a lot to be said for this point of view.

Oceanography enables us to work with our South American friends, not only in the military aspects of naval operations, but in the economic and political aspects. You can go all the way around the South American continent and everywhere you go there is a contribution that oceanography can make. In Colombia and Venezuela, they do need the fish. They do need the development of the offshore oil resources, and they do need the weather information that comes out of oceanography. On the west coast of South America, Peru doesn't need fish. They have already got them rotting

on the beach and it would be a hard thing to sell oceanography on the basis of that many more fish, but they very badly need increased weather information because of the sudden flashfloods and because of the changes to the fish that come when the weather and the Peru current changes drastically. Chile urgently needs offshore resources and they also need the seismographic knowledge and warning of situations that are developing in connection with their very severe earthquakes. They also need weather information. Argentina, Brazil, and Uruguay, urgently need offshore petroleum resources. Oceanography can make a contribution in each of these areas. This is realized in South America.

Last year we had a conference in Washington and brought together naval attaches and representatives from the Hydrographic Offices of Peru, Chile, Argentina, Uruguay and Brazil. As a result of this, we found that we could, by furnishing them instruments, help them in their oceanographic effort and help their navies to tie into the economic and political developments of their countries. This program is moving rapidly, and I am delighted to see that the President has recognized the importance of our military identifying themselves both here and abroad with the economic and political development of the country. This is something that we in the military will hear a lot more of as this cold war goes on.

I have tried to review the economic, political, and the military contributions which oceanography can make now and in the continuing cold war. Now, I will speak very briefly on the organization in the United States for the oceanographic program. At the present time, the oceanographic programs for the United States Government are headed up by an interagency committee for oceanography of which Dr. J.H. Wakelin, Jr., the Assistant Secretary of the Navy, is the chairman. This committee has representatives from the Atomic Energy Commission, the National Science Foundation, the

Department of Health, Education and Welfare, the Department of Defense, the Department of the Interior, the Department of Commerce, and the Department of the Treasury. This is complicated. Administratively, it is rather difficult, but all things considered, I think that from the Navy's point of view and from the national defense point of view, it is worth all the trouble that it takes. No one gains quite as much from the knowledge of the ocean as the Navy does, and thus as the Department of Defense does, but this system insures that anyone who is out working or learning of the ocean, is working with a knowledge of what is going on in other departments. From my point of view, it means that if I do something to help the Bureau of Commercial Fisheries, they will at the same time be doing things to help me. From a budgetary point of view, I think I benefit because I have so many other agencies of government working with me. Congress is not too happy with this interagency committee for oceanography because it's quite informal. It was established by the President and it can be disestablished by the President. At the last session of Congress there was a bill to put it on a more hard-boiled basis, a statutory basis not depending on the discretion of the President. I think that in the next session of Congress, such a bill will be passed and we will have a law establishing an organization to insure the success of our oceanographic programs.

So far in working with this program, the co-operation among the various agencies has been tremendous. When you have trouble as you have at the present time—when the defense budget goes up and the budget of supporting agencies goes down and that's happening this year—the responsibility for those fortunate Department of Defense agencies to remain co-operative with the other agencies of the government increases. They're principally Navy agencies although the Army and Air Force are involved. They include the Navy laboratories of ONR, our Hydrographic Office, the Office of Naval Research, the Air Force Terrestrial Laboratories, and the Army Beach Erosion Board.

There is altogether enough resentment on the part of other agencies in Washington about the trend of money away from them and towards the Department of Defense. If we don't remain co-operative, this opposition will grow. If we are sufficiently co-operative, they will respond and we'll have less trouble living with our large defense budget than we otherwise would have. Another important point is that all of these agencies go to different committees of the Congress. They don't go to the Armed Services Committee. They go to Interstate and Foreign Commerce, Space, and others. We either get a good or a bad repute with these other Committees of Congress and this rubs off on us when our special legislation comes out of the Armed Services Committee and out of the defense subsection of our appropriation committee, then requiring the support of the full Congress. It is good business to co-operate with these agencies. It has its administrative headaches but they are worth it. So much for the broad organizational aspect of the National Oceanographic Program.

Now I would like to discuss the functional aspect. If we are going to have a successful program, you have to go by steps. The basic requirement for a successful oceanographic program is the collection of a vast amount of data, a tremendous amount of data, perhaps the biggest data collection effort that has ever been made in the world. In that connection, this is one of the best times to come along and make the first apology for where the Navy stands in doing this job. We haven't done it well and there are some reasons why we haven't done it well. There is no excuse for some of the things we haven't done well. Before we have a successful oceanographic program, we have to go out and collect a tremendous amount of data. This data has to be fed into an oceanographic data center, handled, retrieved, displayed, and have done to it the other things that data centers do. Then it is put into the hands of basic and applied researchers in a form that can be studied, interpreted,

analyzed and made a basis for the design of equipment or the building of operational concepts to exploit the knowledge gained.

The final payoff comes through operational concepts in the hands of the Fleet or in the hands of the other military services. It comes with equipment in the form of weapon systems if you are using oceanography for military purposes. It comes with better fishing methods if you are using it for fishing. It comes with better offshore resources if you are using it for development of offshore resources. The final payoff comes in whatever area your oceanographic knowledge is to be applied. What is good for the economic and political aspects of oceanography is good for the military aspect. Fifty-three million dollars of the 1962 part of TENOC, the Ten-Year Oceanographic Program of the Navy, is 54% of the total national effort. So, in the total national effort in oceanography in the current year, we are spending ninety-seven million dollars which is a very small amount in terms of Department of Defense and national budgets. Of that amount, approximately seventeen million is going to the data collection effort concentrated in the Hydrographic Office, sixteen million is going into the basic research laboratories of the Office of Naval Research, fourteen million to the applied laboratories of the Bureau of Ships and Bureau of Naval Weapons, and six million to the development of the hardware and the operational concept. A large part of this six million is spent on the ASWEPS program where the Hydrographic Office goes all the way from the daily collection and assimilation of data through basic and applied research to an end product.

Now, I would like to discuss some of the problem areas that confront us in oceanography. The basic problem to which I have already alluded is the lack of data. Over the years very little oceanographic data has been collected which is usable today. The principal effort, of course, has been made in bathymetry or

the getting of distance from the surface of the water to the bottom. In bathymetry, after all these centuries, those areas which are in green are the areas where we have a knowledge of the bottom, sufficiently good for modern oceanographic scientific use. In the blue, we have those areas where it is not completely good but is acceptable. In the white, are the areas where we simply do not have the knowledge of the ocean that we need for the oceanographic studies that are necessary. This is not a pretty picture. It should be better. Among the excuses for this absent information is that the fathometer, the electronic sonar way of ascertaining the depth of the ocean, is an invention of the last thirty years. Another factor, still not completely under control, is that even if we knew the bottom depth we would not have the precise navigational position that is required to go with it. This has been possible only since Loran A and Loran C have been available to us. As you know, the coverage which Loran C has at the present time is very limited. It needs to be expanded into the Pacific Ocean and other oceans. But even if we had been making the effort without this positioning to go with it, we would not have the information we must ultimately have.

Another important aspect of oceanography, and the only other one of the physical and chemical variables that we need to know that I will touch on, is the business of temperature structure. Here again, due to lack of instruments, lack of positioning, the areas in dark blue are those areas of the world's oceans where we know the temperature structure sufficiently well for the scientific applications that are possible today. The light blue areas are where we have inadequate knowledge. The white areas are simply where we have no knowledge at all. A better job could have been done, but the job that is required can't be done until we get better instruments and better positioning. This brings me to the instrument problem.

The instruments of current oceanography are the instruments of the last century. We are using bathythermographs that are little improved over what was available either at the turn of the century or not too many years ago. Our fathometers are little improved over what was available thirty or forty years ago and our equipment for analyzing the chemical, physical and biological nature of the ocean is practically unimproved since the close of the 19th century. This is the most serious problem in the development of an oceanographic program.

These are the steps that we are taking to correct it. A year ago last August we assembled in Washington the best of the scientific oceanographic brains in the country to try to extract from them the answers to these questions. With what degree of accuracy do you need it? With what frequency in time and space do you need it? If you ever try to assemble a group of scientists from all over the country and get those sort of answers, you will know the problems we encountered. It just isn't easy to get a group of scientists to agree on what they need, when they need it, and how they need it. The first week of this conference was about as discouraging and as unorganized as anything I have ever seen. But either because they were frustrated, or because they knew that we were going to stay with them long enough to beat it out and drag it out, at the end of about a week or ten days we had reached a fairly good agreement as to what data they needed, with what accuracy, and with what frequency in time and space. They wanted some fifty-seven variables of the ocean.

On the basis of this conference, we looked for the instruments that were necessary to acquire that information. We came out with several different suits of instruments. The first was the kind of instruments which would be put aboard a survey vessel that had no other job to do but to go out and work full time on collecting oceanographic data. We will never have many

of these. Those that we do have will have to be extremely carefully instrumented and extremely carefully operated. The second suit of instruments we came up with was a suit of instruments to be put on what we call the ship of opportunity. This is the ship that is out there and available to do a job but has other jobs to do. The tail can't wag the dog but if you work well with it, you can get a tremendous amount of use from it. The ships of opportunity are the ships of our operating fleet—our destroyers, our submarines, our cruisers, our amphibians, whatever ships we have. They can do an enormous job if we, who are running the program, keep our perspective and don't think that we are going to be the tail that wags the dog. They have too much else to do, to do anything beyond what they can do conveniently for us.

The third suit of instruments is what we call our ASWEPS suit. This is for the data you have to get immediately in order to turn it into a weather map system. This is a much more simple system. It doesn't require as much accuracy, but the big problem is fast readout, fast interpretation, and fast dissemination to the user. Of course, there are other suits. There is a buoy suit for those areas where it is more useful to use a buoy. Where we don't have ships, there are suits for aircraft. There is a tremendous contribution that aircraft can make to oceanographic data collection. There are suits for Texas towers, lighthouses, and other special things. We have gone to industry with these requirements. Three hundred companies attended our oceanographic instrument conference run, not by the Department of Defense, but by this coordinated national oceanographic program. We have thinned down and have gone on with the second stage negotiations with industry—thinned it down to some thirty-eight companies—and in June we hope to let the contract for the ASWEPS suit which is budgeted and financed to the extent of some two to three million dollars. Similarly, we have just had the second stage conference with industry on the survey ship suit and

the ship of opportunity suit. We hope this, which is supported for some four million dollars, will be contracted by this June. This will lead to the development of prototypes. We hope that, within that six million dollars, we will come up with suitable research and development and prototypes for those three suits of instruments.

Similarly, one of the biggest steps we are making in oceanographic instrumentation is in connection with bottom soundings. We are letting the contract for a new and improved fathometer array which will sweep out a two and one-half mile contoured strip of the ocean floor beneath us as opposed to the single line sweep-out that we get today with the present fathometer. This is funded to approximately four and one-half million dollars and we hope to let this contract soon.

Another problem related to the problem of instrumentation on which I have touched, is the requirement for the economy of platforms. Working with all the agencies of the United States Government, with all ships of opportunity—Navy, Merchant Marine, tanker, fishing, all the rest—it is necessary to use every platform that we can. One of the key factors in the instrument program is that equipment be portable and rugged. It won't do to require a Ph.D. at the end of each instrument on board. We will never get the job done if that becomes a requirement. We're having considerable success with industry, not only in simplifying the instruments, building them rugged and making them portable, but also in making them selective so that the data can be handled in a modern data center using IBM or other computer systems.

Finally, I think perhaps the greatest current problem in oceanography is the matter of education. I don't want to tread on any toes, but this is an unhappy situation. I think it is a fair example to say that I went to the Hydrographic Office and was given two rather impressive titles—Hydrographer of the Navy

and Oceanographer of the Navy. I had never seen the place before and I did not have much education for it. This is wrong. The Navy can't be very proud of this situation. Something should be done about it. I hope that the staff of this college and the students here will be interested in this and will try to do something about it. We will not do what the country needs us to do in oceanography if we don't foster an awareness, an interest, and curiosity in a plebe entering the Naval Academy or an enlisted man entering the Service. This is our medium. We either know it or we don't know it. If we know it, we can be of tremendous service to the country. If we don't, we will never fulfill our potential.

I recognize that there are people of other services here. This brings us to the point of what can you do, and I'll start with some of the things for the other services. I think, whether I suggest them or not, you will probably do them. I have had four years of experience as Chief of Legislative Liaison. I recognized that the Navy had very legitimate aspirations in space and in the air and when I went to Capitol Hill to try to support these aspirations, I was asked how are you doing in your own medium—the ocean. Unfortunately, the answer was that we weren't doing so well. Now, the more pressure, and I think you Air Force and Army people are perfectly capable of putting it on, the more you needle your Navy friends and ask them how they are doing in their own medium, the better I'll like it. I think you will whether I suggest it or not. But you in the Navy, you have got to awaken to this requirement for the knowledge of your medium. You have got to come to a level, I hope, a few years from now, where the Hydrographer of the Navy will have been an oceanographer for some time; I mean a real one, not a nominal oceanographer as I am. You have got to have a system where oceanography is taught at the Naval Academy, where it is taught at the Advanced PG, the line PG, and at the War Colleges. We cannot treat oceanography like my son treats

trigonometry. He doesn't really want to know. He wants to get off the homework hook. I hope that when you naval officers go to sea you will be aware of what we need to know and of what you can contribute to that need. As commanding officers of ships you can do the same job that is now being done to a much greater extent by the Fleet. You can sweep out some areas, You can get some data, and you can feed it in. I hope you will feed it into a Hydrographic Office that is handling it, is aware of it, and has the common courtesy to say thank you. We have tried to provide for this and at the present time are getting tremendous support from the Fleet with their limitations from our instrumentation. As our instrumentation gets better, the contribution which the Fleet can make to its own knowledge of the medium will grow immeasurably. To the State Department people here, I am very sincere when I say that in your efforts to fight and win the cold war, there is a tremendous contribution which can be made by oceanography. I hope that you will look at naval task forces as an opportunity. In addition to the effect of their people-to-people programs, they are a means to carry the equipment needed to get the information which will let the United States identify itself with the improving of living conditions in the underdeveloped countries of the world. Every cruise which a Navy Task Force makes has this potential. It is up to us to exploit it. Some of you naval officers will go to staffs and I think you can make the biggest contribution. We have got the Chief of Naval Operations to sign a letter generally applauding, encouraging, and patting Oceanography on the back. Well, this is a nice thing but it won't do much good. If you want a successful oceanographic program, write it into the operation order. The general purpose letter is read once if it is fortunate, but the operation order is read every night. Get it in the operation order and we'll be in business. We are having a lot of help there now, but we would like to have it to the point where every naval operation order has an oceanographic annex. If

that is there, I will be sure that the job will be understood. It will be read because commanding officers will recognize, as they do in other operation order reading, that to read and understand the operation order is one of the best ways of supporting your wife and children.

Gentlemen, I have tried to define the terms to tell you why it is important, to tell you how it is organized, to tell you what the problems are, and to tell you what you can do about it. We are fortunate in being supported in fairly high places which is always a help. Today I can't complain of money. We are getting enough money. If our ideas and our get-up and go were as good as our money, we would be further ahead than we are.

BIOGRAPHIC SKETCH

Rear Admiral Edward C. Stephan, U.S. Navy

Following graduation from the Naval Academy in 1929, Admiral Stephan joined the *USS Arkansas*, and in May 1931 was detached for duty as Communications Watch Officer on the staff of Commander Scouting Force. In June 1932 he reported on board the *USS Lawrence* and from June-December 1933 had submarine training at the Submarine Base, New London, Conn. He was assigned to the *USS Bass* from June 1934 to June 1936, and for the next year attended the Postgraduate School, Annapolis, Maryland.

In June 1937 he became First Lieutenant at the Submarine Base, New London, where he continued to serve until June 1938. He next had duty as Executive Officer of the *USS S-35*, and in June 1939 assumed command of the *USS S-28*. During the period June-December 1941, he was a postgraduate student in law at George Washington University, after which he had duty as prospective Commanding Officer of the *USS Griffin* and later the *USS Seawolf*. In September 1942 he assumed command of the *USS Grayback*.

He assumed command in August 1943 of the *USS Devilfish*, and in May 1945 reported to the Executive Office of the Secretary of the Navy, Navy Department. During his two-year tour of duty he served on the Secretary's Committee on Research and Reorganization (in connection with the Army, Navy and Air Force).

From July 1947 to June 1948 he commanded Submarine Division 82 after which he served as Reserve Co-ordinator on the staff of Commander Submarines, Atlantic Fleet. In July 1949 he assumed command of Submarine Squadron 4 at Key West, Florida.

He next had duty on the Sub Desk, Undersea Warfare Section, Office of the Assistant Chief of Naval Operations, Navy Department, until September 1951, when he became Legislative Counsel, Office of the Judge Advocate General. In July 1953 he reported as Chief of Staff to the Commander Submarine Force, U.S. Pacific Fleet, and in January 1955 was ordered to duty as Commander Transport Division Twenty-One. The next month he was designated Commander Transport Amphibious Squadron Two. In January 1956 he was ordered to duty in the Office of the Comptroller of the Navy, Navy Department, and on July 24, that year, assumed duty as Chief of Legislative Liaison, Navy Department.

In September 1958 he assumed command of the South Atlantic Force and in April 1960 was ordered to duty as Hydrographer in Command, Navy Hydrographic Office, Suitland, Maryland.

In addition to the Navy Cross and the Silver Star Medal (Army) with Gold Stars in lieu of the Second and Third Silver Star Medals (Navy), Rear Admiral Stephan has the American Defense Service Medal; American Campaign Medal; Asiatic-Pacific Campaign Medal; World War II Victory Medal; and the National Defense Service Medal.

RECOMMENDED READING

The evaluation of books listed below include those recommended to resident students of the Naval War College. Officers in the fleet and elsewhere may find them of interest.

The inclusion of a book or article in this list does not necessarily constitute an endorsement by the Naval War College of the facts, opinions or concepts contained therein. They are indicated only on the basis of interesting, timely, and possibly useful reading matter.

Many of these publications may be found in ship and station libraries. Certain of the books on the list which are not available from these sources may be available from one of the Navy's Auxiliary Library Service Collections. These collections of books are obtainable on loan. Requests from individual officers to borrow books from an Auxiliary Library Service Collection should be addressed to the nearest of the following special loan collections.

Chief of Naval Personnel,
(G14)
Department of the Navy
Washington 25, D.C.

Commanding Officer
U.S. Naval Station
(Attn: Station Library)
San Diego 36, California

Commandant FOURTEENTH
Naval District (Code 141)
Navy No. 128
Fleet Post Office
San Francisco, California

Commander Naval Forces,
Marianas
Nimitz Hill Library, Box 17
Fleet Post Office
San Francisco, California

U.S. Naval Station Library
Attn: Auxiliary Service Collection
U.S. Naval Base
Norfolk 11, Virginia

Howard, Joseph L. *Our Modern Navy*. Princeton, N.J.: Van Nostrand, 1961. 179 p.

The author sets forth in broad, nontechnical terms how the United States Navy is proceeding toward fuller utilization of the sea in the future in American interests and in the cause of freedom throughout the world, including chapters devoted to the scope of naval capabilities in various phases of international relations and in all levels of war. In providing scope this book must perforce sacrifice depth. It is, therefore, an orientation to naval affairs through the description of the wide variety of interests, vehicles, and weapons now used by, and coming into, the fleets.

Aubrey, Henry G. *Coexistence: Economic Challenge and Response*. Washington: National Planning Association, 1961. 323 p.

This is the eighth and final volume in a series of a special project set up by the National Planning Association to study the economics of competitive coexistence. While the preceding seven volumes were either country or area studies, this volume reviews and analyzes the entire problem in broad perspective. After defining terms and the working parameters, the author demonstrates the needs and aspirations of the underdeveloped countries toward which the economic offensive is directed. He then sets in focus the capabilities of the major participants in the battle, i.e., the communist bloc versus the United States, Western Europe and Japan. He further includes an examination of the difficulties involved for the free world and the communist bloc in effectively carrying out a trade and aid program. This analysis is followed by a consideration of the instruments and techniques used in the competition, by both the East and the West. Here the author shows the departure of the

Soviet Union from autarkic practices and its emergence as a world trader, including the political implications of that trade. Instances are cited where the Soviets have come to the "rescue" of one-crop countries in time of need. Aid is discussed in terms of gifts, grants, loans, credits and military and technical assistance. Where pertinent throughout this section, individual case examples are presented. The concluding section attempts to analyze the tasks of coexistence for the future, and surveys policy alternatives available to the West for meeting the challenge.

Tsuji, Masanobu. *Singapore, the Japanese Version*. New York: St. Martin's, 1961. 358 p.

This is a highly absorbing account describing the capture of Singapore and the events which preceded the Malayan campaign. During the campaign the author served as Chief of Operations and Planning Staff, 25th Japanese Army in Malaya, and participated in the initial planning and studies which were made on Malaya a year or so before the war started. He is presently serving in the Japanese House of Councillors in the National Diet. *Singapore, the Japanese Version* will give the reader a greater appreciation of the Japanese tactics as they were employed in jungle warfare. Their use of flanking maneuvers through the heavy jungle growth and in the swamps proved to be superior time and again against the strongly defended and fortified narrow defiles as set up by the British. Though the amount of advance preparation undertaken by the Japanese prior to the attack on Pearl Harbor is fairly common knowledge now, little if anything is known of the equally large order of planning and preparation that was effected for the simultaneous and co-ordinated attacks in Malaya, Hong Kong, Borneo and the Philippines that accompanied the Pearl Harbor strike. This effort is alluded to in this book. An interesting facet of the Southeast Asian thrust concerns the Japanese use of French Indo-China as a

build-up and staging area. It is readily apparent that without this intermediate area an amphibious assault into the Southeast Asian archipelago would have been infeasible. Does this not point up the key position of the area now called Viet-Nam?

Nuechterlein, Donald E. *Iceland—Reluctant Ally*. Ithaca, N.Y.: Cornell University Press, 1961. 213 p.

The detailed examination of Iceland's foreign policy with direct focus on the United States-Icelandic defense relations during the period 1940-56 is thoroughly covered in this book. Dr. Nuechterlein investigates the history of Iceland's policy regarding national security since 1940, with particular emphasis on the relation between the nation's domestic politics and her foreign policy. The major political parties' positions and party newspaper editorial opinions on each political decision reached are fully discussed. Iceland's complex political history is also covered. A major development in her history was the decision to join the North Atlantic Treaty Organization in 1949, with the consent to the stationing of United States defense forces on her soil. The extreme concern she displayed to insure that the members of these defense forces stationed in Iceland have the minimum contact with the civilians and Icelandic youth is of particular interest, and appears to be the basic reason for the continued popular opposition to the defense forces.

Platt, Washington. *National Character in Action*. New Brunswick, N.J.: Rutgers University Press, 1961. 250 p.

Brigadier General Platt, who had over ten years' experience as an intelligence officer, has written this book because of his deep concern over the shortcomings and deficiencies in the training of our Foreign Service and our Foreign Intelligence. He

believes that to know the people of a foreign country and to formulate an intelligent foreign policy, it is necessary to go beyond the statistics and to judge them by their nature, their capabilities and their limitations. He feels that the intelligence community has neglected national character—an intangible but vital factor—as a basic factor towards good international relations in peacetime as well as in war. The volume contains an outstanding bibliography for more detailed study of the national character of each of the leading nations.

Schein, Edgar H. *Coercive Persuasion*. New York: Norton, 1961. 320 p.

Dr. Edgar H. Schein conceived his idea for *Coercive Persuasion* during the period in 1953 in which he was sent to the Far East as one of a number of Army research psychologists to debrief the civilian repatriates of the Korean conflict. Although one of the major conclusions that came out of those interviews in the debriefings was that the much-feared "brainwashing" process of the Chinese communists was really more of an intensive indoctrination program combined with very sophisticated techniques of undermining the social structure of the prisoner groups, he points out in his book that "brainwashing" is better understood by using the term "coercive persuasion." According to the author, this is a more accurate descriptive concept because basically what happened to the prisoners was that they were subjected to unusually intense and prolonged persuasion in a situation from which they could not escape. If a reader is willing to approach the book with a spirit of psychological inquiry rather than the hope of finding final answers, then the data, assertions and conclusions made by Dr. Schein and his colleagues will convey the complexity of the coercive persuasion phenomenon.

Gallois, Pierre. *The Balance of Terror: Strategy for the Nuclear Age*. Boston: Houghton Mifflin, 1961. 234 p.

Pierre Gallois, is a retired French Air Force General. A former strategic planner for the Supreme Allied Command Europe, he presents here a novel but controversial strategy. General Gallois believes that to outlaw atomic weapons from the arsenals of the United States and Russia would create an illusion that only conventional weapons would be used in a war among the great powers. Once engaged in the struggle, every major power would then hasten to produce the explosives allegedly outlawed. It is safer then to prepare for the total, ultimate, absolute war, a war which Gallois believes can never take place, because the risks have become out of proportion to the goal to be achieved. In support of his strategy, General Gallois examines in considerable detail the retaliatory as well as the defensive forces available to both the Soviet and the United States. He then analyzes the conditions under which an attack on either country might be launched, with a corresponding conjecture on the outcome. General Gallois' book will occasion considerable discussion by strategic planners everywhere. Many will disagree with his outspoken views, but all should find his book thought-provoking as well as interesting.

May, Ernest R. *Imperial Democracy; the Emergence of America as a Great Power*. New York: Harcourt, Brace & World, 1961. 318 p.

Imperial Democracy is a history of the rise of the United States to the status of a world power. The unique feature of this book is the considerable portion of it devoted to the reaction of foreign powers to the United States as a growing menace. In a relatively few years, the attitude of these foreign powers changed from indulgence and patronage to fear and respect for the increasing might of the United

States. The political intrigue connected with attempts to form a European alliance directed against the United States in order to prevent American intervention in Cuba in 1898 makes interesting reading. The emergence of the United States from the Spanish-American War as a world power bent on imperialist expansion is also covered from the viewpoint of national party politics. The author has treated in interesting detail a significant period in American history.

Dornberg, John. *Schizophrenic Germany*. New York: Macmillan, 1961. 302 p.

By exploring various historic as well as contemporary political, economic and social conditions in Germany, the author focuses on the variegated complexion of the peoples of new Germany. He discusses the war trials and other postwar procedures to prosecute the diverse types of war criminals. This treatment extends into the German State procedures as well (as differentiated from the Allied efforts toward de-Nazification). He provides interesting accounts of some individuals, including Eichmann, who mysteriously disappeared in the postwar period. An attempt is made to answer the question as to whether or not the neo-fascist movements are a potential force in Germany. In this section, Mr. Dornberg categorizes and describes the variety of associations which he labels as *right radical*, *militaristic* and *nationalistic*. One chapter deals with the cost to the German people of reparations tendered to individuals and countries that were victims of the Nazi terror. In another chapter entitled *Skeletons in the Public Closet*, the author discusses the impact of ex-Nazis holding public office. Business ethics and anti-Semitism are explored and analyzed for their effect on the social fabric, as are the school systems, press, literature and film activities. In general, this author contends that Germany is a complex society suffering from a split personality. He maintains that democracy is

only skin-deep and that there are many trials and tribulations yet to come. In the end, he asks, "Will democracy triumph?" but answers this question by indicating that the real determination can be made only in the Germany of the future; only if it can withstand the test of economic recession or depression; only if it can weather a political onslaught from either the left or right; only if it can successfully make the transition from Adenauer leadership. These he suggests are the real problems that confront the Germans and the West.