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## **SPECIAL ATTENTION TO THE READER**

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**NAVAL WAR COLLEGE  
REVIEW**

**Issued Monthly  
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Newport, R. I.**

# THE NATURE OF WAR

A lecture delivered  
at the Naval War College  
on 1 September 1953 by  
*Colonel George A. Lincoln, U.S.A.*

## *Introduction*

Admiral Conolly, gentlemen of the Naval War College. It is a great honor to be invited to speak from this platform and to this group. The honor carries with it a sobering responsibility. A discussion of the nature of war before an audience of experienced professionals dedicated to the mission of national security is certainly a safer mission for a senior flag officer or a civilian than for a contemporary. I approach my mission with humility. There are few absolutes and many controversies within that mission. My method and direction this morning will be to locate targets and suggest ideas for further discussion.

This approach is open to the charge of being long on ideas and short on opinions. But we need a great deal of discussion and perhaps some controversy to throw light on the nature of war in the future and on what we ought to do about it in our professional positions.

## *Method of Attack on Subject*

There is a choice between digging a post hole in a portion of this subject for the next 45 minutes or attempting to plow across about 40 acres of the field. I have interpreted your President's helpful suggestions to me as asking for the 40-acre attempt. His letter suggested I discuss the elements of warfare and explore the characteristics of modern war and their effect on modern society.

I have not interpreted this discussion as necessarily including an examination of the nature of armed force or the operational use thereof for several reasons. The most important reason to my

mind is that armed forces are means rather than ends and are now institutionalized in ways that may not be particularly helpful to considering the foundational nature of war in the future and its effects on modern society. It is possible that armies and even navies and air forces as we know them may even in our time be recognized as but showy things. But the welkin rings with the voices of articulate experts like General Bonner Fellers, who are mauling this aspect of the nature of war. The direction of my remarks is rather toward explorations which give guidance to the use of armed force as an instrument of policy to deter war and to further our country's interest. This aspect of the use of force is traditionally probably better understood by naval officers than by officers of other services. To interpolate a personal note, I was first forced to think about it intensively through my fortunate associations with Admiral Savy Cooke — from whom I learned a great deal.

As an important preliminary to any analysis of the elements of warfare and their effect on society, we need a discussion of the definition of war and a look at some of the lessons of history.

### *Definition of Terms*

The definition of terms is much more than dialectical exercise in this examination. My personal files contain the records of a faculty seminar at Columbia in which, after 4 years of bi-weekly discussions of peace and war, an inventory of progress showed we had not been able to reach agreement on a definition of either "peace" or "war." The learned group was unwilling to accept Sherman's definition that "war is all hell."

Dr. Quincy Wright in his 1500 page *Study of War* defines war as "the legal condition which equally permits two or more hostile groups to carry on a conflict of armed force." Dr. Wright notes other definitions, for example, "war is a form of social behavior." This last is undoubtedly a definition by a sociologist. Also, war is a "dispute between governments carried on by violence."

Dr. Wright's field of greatest expertness is international law. His definition is legalistic. One is led to the thought that there is danger of defining war and the nature thereof, primarily in terms of one's own profession, interest or experience, perhaps to the exclusion of vital but unfamiliar aspects. I am going to avoid that possible pitfall this morning by discussing the definition of war but not defining it.

### *Armed Force as Characteristic of War*

There is considerable agreement that war is characterized by the use of armed force. But a discussion confined to the use of armed force defines the nature of war little better than a discussion of the marriage ceremony defines the nature of marriage. Parenthetically, this analogy has possibilities for expanded discussion which we unfortunately have no time to develop.

### *Contribution of Concept of Cold War*

Furthermore, the agreement is not complete that war is characterized by the use of armed force—witness the common and even official use of the term “cold war”—which Churchill defined as “all mischief short of war.” But in this concept of cold war there is an important indication of the true nature of war. In cold war the cutting instruments of action are political, economic, psychological and the threat of overwhelming military power. These same instruments continue to be utilized when active armed force is called into the equation of a struggle between groups. The political, economic, psychological means provide the essential support for armed force in action and also continue as instruments impinging directly on the war objective. Any settlement of a war is very dependent on the threat of further active use of armed force.

### *War Objectives and the Nature of War—Clausewitz*

The mention of the *objective* brings me to one of the clear and non-controversial aspects of war. It has an *objective*. This readily acceptable truth makes Clausewitz' well known definition

that "war is nothing but a continuation of political intercourse with an admixture of other means" still partially sound. Referring to my comment on armed force as an instrument of policy, our problem today is to mix the "other means" that we attain objectives without war. But looking at the present and into the future, this definition is not an absolute for at least two main reasons:

1. Once committed to use of armed force the original policy objective may have to be drastically adjusted to the realities of military developments — which are somewhat less predictable than in the days of Clausewitz.
2. The realities of modern war now make necessary the major shift of many national policies — policies in social, political and economic areas — which once were affected little or not at all by resort to armed force. It takes little imagination to see the jeopardy of some of our country's treasured institutions in case of war. Furthermore, armed force once unleashed now creates problems not even envisaged in the time of Clausewitz. It may unleash internal social, political and economic forces with the outcomes not very predictable.

### *Two Characteristics of Modern War*

Closing my comment and caution on Clausewitz, who certainly comes closer than Dr. Wright because he recognizes the objective and recognizes that objective is change in the social, political and economic areas, I suggest that the nature of war now includes:

1. A likely conflict between military objectives which are means and war aims — political objectives — which are ends.
2. An unprecedented unpredictability of outcome even though the military outcome may be predictable. Using

the common expedient of quoting great men to support personal views, this is from Dr. Shotwell: "Now . . . war is as uncertain in its direction as in its intensity, or its spread. It is no longer a safe instrument for statesmanship. . . ."

### *Change of Modern War from Past Situations*

Why this conflict between means and ends and why this unpredictability? It seems they are, to a considerable extent, new to history and are blamed on at least three factors:

1. Modern war is allied war. This situation tends to limit the freedom of action of the individual nation state.
2. Military technology and techniques now cause war to affect directly huge populations and a wide span of social, political and economic institutions.
3. There is an awareness on the part of individuals of the institutional changes in the way of life which war may generate and there is an ability of groups and leaders to take advantage of war's disturbances.

Put simply, war has in our time become, much less than formerly, a policy which can be programmed with assurance. Hence Clausewitz' definition of war used as a slogan without analysis is dangerous. Again quoting Dr. Shotwell: "In short, war which was once a directable instrument of policy has now changed its nature with the nature of modern society and ceases to be controllable and directable. . . . it becomes a contagion among the nations; and one cannot safely use a contagion as an instrument."

### *LESSONS FROM HISTORY*

We should look to history for its lessons while continually questioning the applicability of historical precedents to our future.

I suggest two areas for particular consideration: (1) war objectives sometimes called war aims and the (2) conditions of the use of armed force described by the terms "limited war" and "unlimited war."

### *War Aims*

You will find useful a study of war aims related to the military objectives of our country's last three years. There is an interesting possibility that the outcome of the Korean war may be closer to a realization of the initial aims than were the overwhelming victories of World Wars I and II. This is admittedly a controversial suggestion. It is made as a forerunner to the thought that the recent and current rapid elimination of physical and organizational limitations on the use of military strength now necessitate political decisions, once unnecessary, as to the extent to which armed force will be used as an instrument in war. A much wider variety of objectives than formerly is now open to the choice of leadership in case war occurs. Capabilities now exist, or may soon exist, to extinguish the opponent completely or to permit the opposing contestants to exhaust themselves completely.

The world emerged into this new situation within the last decade. The situation makes the conduct of war much more of a matter for political decision than formerly and leads to the thought that, in our system of civilian control of the military, we had better educate our controllers.

### *What Constitutes Destruction of Armed Force?*

When military extinction of a possible opponent was practicable at an acceptable cost and the achievement of war aims followed inevitably from this extinction (as it did in our Civil War and the Franco-Prussian War) the doctrine of annihilation of enemy forces (Von Schlieffen's Cannae doctrine) as the overriding military objective could be accepted without qualms. But the term "armed force" comes to have less meaning in this context

when we realize it implies supporting arrangements back to the farm, the factory, public morale. All these elements are now feasibly subject to direct military attack and military destruction.

*Military Capabilities Now Necessitate Judgements as to How Far They are Used*

A country, our country, may have the capability to lock the door behind an enemy and then to bludgeon him down against it even as we destroyed Germany in World War II. But the cost may be high, it may be unpredictable, and the actual military outcome as related to postwar objectives may be less favorable than would occur with a more selective effort directed at a political solution short of complete extinction of the opposition. Put simply, military objectives in war are to move and exert military force to cause the opponent to agree to certain war aims. If those war aims extend to the destruction of the opponent's political, economic and social institutions, we have to include, under the nature of war, the business of both destroying and rebuilding those institutions as part and parcel of the war effort.

We have studied and talked little about these matters in connection with the study of war in our colleges. Communism has incorporated this destruction of old institutions and construction of new ones as part and parcel of war. We in our country should consider seriously whether we also have the same concept of war. If we do it is necessary to bring about the study and preparation of the necessary measures for use in case war comes.

*Weakening of Neutrality*

The historical concept of neutrality seems to be weakening if not disappearing. The nations taking a legal position of neutrality tend more and more to be "neutral against" one belligerent and to have vital interests involved in any armed conflict between other nations. In effect, the would-be neutrals have important war objectives which force them toward active participation if those objectives appear to be in peril.

## *Limited War and Less Limited War*

Looking into history, even recent history, there were limitations on both the scope and the nature of war which were beyond the capabilities of leaders and nations to eliminate. For instance, wide-spread popular support of war is comparatively new in history except in repelling an invader.

Historically there has been a definite limitation on the proportion of manpower which could be mobilized for the war effort. Two of the main reasons were the high proportion of manpower required in the agricultural industry to provide a minimum standard of living and the lack of logistical techniques to support huge forces over a long period. The situation is now materially changed. About 12 per cent of our U. S. labor force provides our agricultural means. I need not recite the techniques and method by which we are able to support huge forces at long distances.

Destructive power in war did not increase phenomenally for a long period prior to World War I. In fact, except for one or two instances such as Sherman's march to the sea, destruction of other than military forces and installations did not change too materially over the time between Tamerlane and World War II.

The weapons and techniques of war made possible the development of a body of custom and understandings roughly paralleling diplomatic intercourse and usually called the laws of war — thereby limiting the impact of war on the individual. Following this thought for a minute, war as most of us have studied it has been practiced by western nations drawing their way of thought from what is sometimes called the Christian-Judaic-Roman tradition. Military opponents have usually possessed common denominators in political and economic philosophy and particularly in the value placed on the individual and hence on human life.

I think everyone here will accept the enormous change of the last decade without listing any other of the many characteristics of war in the past. Technology has recently multiplied the powers of physical destruction which existed in the past. The multiplier action apparently continues in the foreseeable future. Techniques have multiplied the power of social, economic and political change. The Asiatic with his disregard for the individual and entirely different concepts of law, order, good and evil is becoming a major factor of war.

Our capability for mobilization and mobility have steadily accelerated since Napoleon first demonstrated that a modern nation's manpower could be mobilized for all but support of an external war effort. The Germans perfected a system for readying military manpower for instant use in case of war. Railroads and the Industrial Revolution made possible the movement and support of proportionately greatly increased armed forces. Technology makes possible the application of armed force of a great nation anywhere on the globe. Military objectives can now be comparatively unlimited.

### *The Historical Change in the War Machine*

To make war there must be what is often called a war machine in the possession of each contestant. I mention only two aspects of many concerning this machine: (1) the time factor and (2) the trend of the war machine toward incorporating the entire nation into its components.

### *Change Related to Timing*

The lead time of military preparation for either attack or defense has been steadily increasing. Today, as everybody here knows, years are required to progress from a low to a high level of preparedness. Furthermore the rapid change in military equipment and techniques requires continual concentrated effort rather than the intermittent efforts familiar in the history of only the recent past.

In contrast to the long time to get ready there has been a steady decrease in the time when military force might conceivably achieve its military objective if applied by one nation against another. Some people now writing for the public press hint that the time is not far off when our own great country, unless vast and costly defense arrangements are put in hand, could be reduced to paralysis in a few hours campaign.

There seems no reason to believe that these trends related to the time factor will not continue. Hence the nature of modern war places emphasis on readiness which perhaps becomes the basic principle of our strategy of security.

*Change Due to Incorporation of all Elements of National Life in War Nations*

Military power not long ago was a thing considered as apart from the U. S. national life and from the national way of life of most nations. Now it is analogous to an iceberg of which I believe only the top 1/7th is visible. That top 1/7th corresponds to our combatant forces. These are dependent for existence and effectiveness on economic and political arrangements, on public support, on civilian activities such as civilian defense, and, in short, on the integrated effort of the entire nation which is analogous to the unseen portion of the iceberg. I stress this point because most of the public and some professionals are fascinated by the top 1/7th of the iceberg and are short on realization concerning the other 6/7ths. Mahan, by the way, in bringing the importance of seapower, particularly blockade, forcefully to the attention of political leaders, was giving an elementary course in the importance of the lower 6/7ths of the iceberg. Parenthetically, the necessities of the proper organization and arrangement of this 6/7ths do conflict at times with the realities of one of our most treasured institutions — the tripartite form of federal democracy. This we must realize and to this we must accustom our so-called "military minds."

I have labored, perhaps overlong, this emphasis on the rapid evolution of the past two decades in many aspects of the nature of war and the accelerating change probably going forward in the future. There is a reason for the emphasis. Precepts produced from observation of situations in preceding generations may often be inapplicable to the current situation and should be questioned. So much for my bow to the importance of history.

### *ELEMENTS OF MODERN WAR*

Under the heading of elements of modern war we can, I think, only outline some useful methods of analysis this morning. I suggest two ways to define the elements of modern war: (1) in terms of time, and (2) in terms of policy areas.

#### *Elements Described in Terms of Time*

As to the definition in terms of time, there are obviously three distinct phases: (1) the prior preparedness period, (2) the period of hostilities, and (3) the period of pay-off, of rehabilitation and of consummation of war objectives. This definition may seem too simple for a mature audience. But note that America, twice in this century, failed to comprehend the importance of the pay-off period or the applicability of military power thereto. You might spend an hour sometime discussing the costly problems remaining, assuming the demise through war of the military power now controlled by the Kremlin. As to the 2nd time period, that of hostilities, it seems, from our U. S. standpoint, that we must think of it in three sub-periods (a) a period of considerable damage to ourselves and of material defensive operations, (b) a period of stabilization and (c) the period of victory. Unless an enemy grossly underestimates our capabilities he would not choose war except under circumstances forcing on us some such progression as I outline. It is the last period, the period of victory, which determines the pay-off and demands great political wisdom. That period started in July 1944 in the European side of World War II. In hindsight, which is always full of smug wisdom, we may have bungled it.

### *Definition of Elements in Terms of Policy Areas*

One other definition of the elements of war is to list them as political, economic, social-psychological, and military. As I mentioned earlier, each factor is an instrument for direct use against the enemy; also the first three listed are the pillars supporting the military. This support is mutual. For instance, political pressures on neutrals and on the enemy are of little value without military successes. Even economic warfare, as those here well know, has a diminishing effectiveness unless military blockade supports paper blockade techniques. The people's will to suffer and work is closely related to military action—and oddly enough may be inverse to military successes. Such was England and Germany's production record and also—to some extent—our own in World War II.

### *Analysis of Military Policy Areas in War*

The military policy area breaks clearly into sub-areas. Those are not, in my opinion, seapower, landpower and airpower. Such a breakdown may still continue to be useful for organizational, budgetary and recruiting purposes and the hazards and controversies of change undoubtedly argue for retention of the concept. But there is a more suitable breakdown into sub-areas for the purpose of highlighting the existence and importance of the lower 6/7ths of the iceberg of military power I mentioned previously. I suggest that the realities of the current struggle for the world combined with modern strictly military matters show four military elements to war:

1. Mobilization and defense of the home base.
2. Arrangements with allies. These materially influence military strategy.
3. The line of communications for support of allies and ourselves.
4. The actual application of military power against the enemy.

Each of these elements is a proper subject for a book. But note the effect of various policy choices under any one of the headings. Without a mobilization base our prospects are only for defensive war plus some retaliatory action. Without allies we have a much lessened need for an L of C and perhaps no remunerative place to use some of our current military capabilities. Without defense of the U. S. we will soon have, for the first time in our history, a danger of quick military extinction. This possibility when recognized by friends and enemies, increases the effectiveness of the enemy's cold war measures directed at the in-between world of friends and neutrals. Unreadiness is paradoxically one of the ways to prevent or delay modern war since a government may choose the way of a modern "Munich" rather than the enormous destruction of modern war.

#### *Elements of War Vary for Different Nations*

Parenthetically, the elements of war are certainly different for different states and at different times. Thus Clausewitz and the Germans who studied war from 1815-1914 thought in terms of landpower, limited war aims clearly related to military strategy, and the deliberate adoption of war as an instrument of policy. Some countries, in the past, and perhaps even now, must think of war as primarily a defensive operation and perhaps even of the certainty of invasion. Their major elements of war include the underground resistance and the measures to preserve vital institutions and the national entity under the smothering blanket of enemy military power. Since we are engaged in an allied effort we have to comprehend our allies' viewpoint as well as defining our own.

#### *EFFECT OF WAR ON MODERN SOCIETY*

In considering modern society and modern war we must, I think, consider both societies of individuals and the world society of some 80 nation-states which have relations with each other as sovereign entities. The effects of the nature of war on

both the society of human beings and the society of nations have shifted greatly over the last 40 years.

### *Effect on Society of Individuals*

Wars have been the kick-off for many major political, economic and social changes. In retrospect some have perhaps been desirable. But the present and the future have major differences from pre-World War I.

1. In 1914, and even for some peoples as late as 1939, populations went to war with enthusiasm. Except perhaps in Oriental countries, and this exception is worth noting, recent attitudes are those stemming from a grim realization of the probable cost.
2. Major war is now almost certain to change a society materially — even with victory; witness the change in Britain. Defeat may bring extinction.
3. Readiness now being an essential, the peacetime way of life is changed by such measures as conscription, huge military procurement with its impact on economy, civilian defense, high taxation, etc. To emphasize this point consider that the standard 12 months European conscription of pre-World War II is now 18 months to two years; the 5.9% of national product then devoted to armaments has now risen to about 10 percent for our NATO allies.

In our country the people have become uneasily conscious of military matters. We are, for instance, moving toward a situation where a large proportion of able-bodied manpower between 19 and 30 is either in the active service or subject to call from the reserves.

5. There have been some instances, but not enough, of restraint in group conflicts, e.g., labor management

in Britain, to the end that the nation may be strengthened against war. This voluntary restraint may increase.

6. The consciousness of the great destructive power of modern war has generated a great deal of individual and group activity toward war prevention, e.g., public interest and pressures in negotiated settlements, in regulation of armaments, and in international collaboration for the settlement of disputes. This consciousness has also produced the neutralism and "head-in-the-sand" approach of some Europeans.
7. Specifically turning to the U. S., we have become a very military (not warlike) people. This has occurred so rapidly that much of our current leadership in public office, school, church and community is, and will remain, unprepared to grapple with the realities forced on us by the nature of our national security situation. Typical are the views of two senior individuals I respect greatly. One now asks me, at each of our meetings, why we can't just tell all the other nations in the world to go to hell! — except he wants to annex Mexico. The other inquires whether it wouldn't be economical and sound to give up all interest in the rimland of Asia.

### *Effect of Modern War on Society of Nations*

The effect of modern war on the society of nations is as marked as the effect on individuals. We are all familiar enough with history to know that World War I occasioned the addition of a large number of nation-states to that society; World War II resulted in the disappearance or the curtailment of sovereignty of many, and the rapid decline of colonial imperialism with the accompanying emergence of many Asiatic states. World War II also brought to the world what has been called "bipolarity." It

seems that Communism combined with the nature of modern war now make unlikely the reestablishment of any multiple balance of power system in the world.

Some of the specific effects of modern war on nations are:

1. No small nation, or group of small nations, can now stand alone.
2. Neutrality becomes difficult, and, for some nations, impossible.
3. Military force, once unleashed, overflows huge areas because of its speed, range and destructive power. Barriers of mountains, seas, deserts and rivers have much less military — hence political — meaning.
4. Modern arms are too costly for many nations and can be manufactured, in all needed types, by only a few.
5. Alliances are now a necessary element of international relationships.

There is a general and genuine urge toward collaboration to prevent war — because war is so feared. Most of the world's nations will cling to the UN, if only because it is a tangible reed to lean on — and a weak reed is better than none. It is an interesting truth that the great unifying force in the world since World War II has been a fear of modern war. Part of this fear is fear of the unknown and is due to inability to appraise politico-military developments in case major war occurs. This obscurity may help for a long while in our deterrent strategy against Soviet communism. For there is a question that the men in the Kremlin are gamblers. They may be willing to pay a great price for the world but they are likely to want to be certain that favorable results are achieved. There is no sense in definition by the U. S. of an equation which enables them to figure the cost of successful use of war, either limited or total, as an instrument of policy — unless we are very certain that their figuring will always show the cost prohibitive.

## *NATURE OF WAR AND U. S. STRATEGY OF SECURITY*

It is worthy to note that our country has never before, in times of peace, faced a world situation in which our military planners had any useful guides to the likely nature — other than battle tactics — of war if it came. And we did not foresee the nature of the Korean War even though, in hindsight, the probability should have been clear.

There is no point in emphasizing to this group the changes and complications forced on our country's security policy by the recent changes in the nature of modern war. We have come to share a responsibility, in our enlightened self-interest, for the security of places which most Americans cannot find on the map.

The requirement for readiness faces our country with a need for a continuing high level of preparedness and a see-through constancy of public and Congressional support which is unprecedented. This is perhaps the major problem.

The advance of military capabilities for destruction may soon make "keeping ahead of the Russians" in military technology much less meaningful. Twice total destruction, if opposed by total destruction, still does not give security. Knowledge of the existence of enormous destructive power may produce a world outwardly calm. But it will still be a very dangerous world with a stability very dependent on a combination of military readiness and political wisdom.

Alliances are troublesome methods of making war and even more troublesome methods of deterring aggression. But we have, I believe, no other recourse than to accept the truth of the ditty chanted at the Gridiron Club dinner in 1949:

"The old North Atlantic has spread quite a lot  
To Italy from Maine.  
There'll soon be no country that touches it not  
With the single exception of Spain.

They call me a schemer; well maybe I am,  
But today I can follow the shore  
Of our North Atlantic, all the way to Siam."

The strength and cooperation of these alliances is bound to fluctuate. But it seems only prudent to preserve our forward strategy of security "all the way to Siam" until the obscurities of the future unfold. By preserving that forward strategy we retain the maximum number of possible alternatives from which to choose in case the prophesies of some of our more atomic-minded commentators come true.

I have stressed several times the importance of the economic aspect of modern war. Any rough calculation of the cost of World War III is likely to price out at around a trillion dollars without taking account of destruction due to attack on the U. S. — which might be a third or more of our industrial production. This order of cost, combined with casualties, would be very likely to mean a drastic change in our U. S. economic institutions — another aspect of modern war. Obviously this probable cost is a yardstick against which to measure how much we can afford to pay to avoid war.

In closing let's turn our thoughts for a moment to the military aspects of modern war. As to the principles which should guide us I can do no better than hope you all have read Admiral Conolly's article on *The Principles of War*. Certainly my thoughts can add nothing to that analysis. As I understand Admiral Conolly, he agrees with Napoleon's maxim that "Nothing is absolute in war."

As to the way of military strategy and of battle, if war comes, I suggest we have to be prepared for developments across a wide spectrum of possibilities — some of them distasteful to those of us in uniform — from "phoney war" to thermonuclear war. There is danger that we base our readiness on some assumption which will be proven false by some technological change or political action.

But our hope and objective is to act that military force is a successful deterrent and is, in itself, an adequate instrument of policy without our being forced to accept war. The matter we have in our welter of public discussion, or perhaps even in our classified papers, includes certain basic questions:

- a. Taking into account that we have the twin objectives, not always compatible, of keeping the in-between world from being nibbled by communism, and of deterring war, what is the best deterrent national security program?
- b. Is this best deterrent program the same as the best program for military victory if war occurs?
- c. How, if the nature of war now makes it too dangerous for use as an instrument of statesmanship (and I think it is rapidly becoming so — if not so now) do we design the formula for safe slacking off of the arms race?

I leave my subject with these three questions and with a thought borrowed from a line of Yeats and a line of Clausewitz.

In this world ridden by the dragons of communism and atomic explosives, military strategy may seem simple; but if you look again you will not find it very easy.

**BIOGRAPHICAL SKETCH**  
**Colonel G. A. Lincoln, USA**

Colonel George A. Lincoln, USA, was graduated from the U. S. Military Academy in 1929. He was a Rhodes Scholar from the state of New York and received both B.A. and M.A. degrees from Oxford in 1932.

During World War II he rose to the rank of Brigadier General, having served in the European Theater, 1942-43, and on the War Department General Staff from 1943-47. He participated also in war-time international conferences and was the War Department member of the Joint and Combined Staff Planners from 1944-47. At the Paris Conference in 1946, Colonel Lincoln served as Military Advisor to the Secretary of State. In 1948-49 he was Deputy to the Under Secretary of the Army. Colonel Lincoln was Defense Department representative for the drafting of the Mutual Security Program; Defense Advisor to the U. S. Representative, Temporary Council Committee of NATO; and a member of the U. S. Delegation to Rome and Lisbon. Since 1947 he has been made permanent Professor of Social Sciences at the U. S. Military Academy.

He has served as lecturer at the Army, Air, and National War Colleges. He is co-author of "Background for our War," 1942, and "Economics of National Security," 1950, and author of "International Realities," 1948.

# THE MEASUREMENT OF WAR POTENTIAL

A lecture delivered  
at the Naval War College  
on 4 September 1953 by  
*Colonel Bruce D. Rindlaub, U.S.A.*

Gentlemen:

I have been asked to talk this morning about "The Measurement of War Potential." Back in Washington when we ask people to talk about this subject we give them about the same title and scope I have been given—but when they talk about it, most cover only a small, restricted area of the subject as a whole. If I weren't here among friends and among other officers of the service who have some compassion for another who has been put on the spot, I wouldn't talk about the whole subject either. But I am going to do that this morning in so far as I am able.

I would like to change the title of the talk, though. To me, the word "measurement" denotes an ability to find a numerical answer. The subject of "War Potential" is so affected by intangibles, which are not subject to numerical evaluation, that you don't come up with any numerical answers when you are through. So I would like to title my talk: "The Comparison of War Potentials."

This morning I am going to talk a little bit about what "war potential" is; we will discuss the things that go to make up war potential—the elements which are contained within it; following that, I will talk very briefly about a method of approach to this subject. Before concluding, I would like to say just a word or two about the progress which has been made in the United States in handling this study.

To most of us, the words "war potential" are very familiar. You hear them frequently—but what do they really mean? You

seldom find two people who have exactly the same idea of what "war potential" is. Overall, there is pretty good agreement. I think we can say that "war potential" is "the potential capacity of a nation, or a group of nations, to exercise force — ultimately, military force — to cause another group of nations to do the bidding of the first group." We all agree, generally, that this is what it is but we are apt to forget that behind the military power, the military force, which most of us think of, there are the things which make that force possible. There is the support given by the civilian population; there is the support given in the political field by the Government — both in the international and domestic affairs; and then there is the psychological and ideological support, which is an inherent part of any people.

Granted that war potential is the potential ability, or capability, to exert force in any world conflict — what kind of a conflict are we talking about? There are a great many economists who say that you cannot even touch the subject of "War Potential" unless you set up, first, a particular restricted strategic situation in a particular restricted geographical area. I don't believe they are correct — I think we can take a much more general approach than that. But we do have to place around our consideration of the subject some sort of boundaries so that we know we are all talking about the same thing.

In this atomic age there are, broadly speaking, three directions that a major war may take: First, there is a possibility that one nation, through an overwhelming superiority in initial force or surprise, may so destroy its enemy's economy that its power to produce, to mobilize, is completely destroyed — and victory comes almost immediately; there is a second possibility that the capability of both sides for an atomic attack may so outweigh defensive capabilities that, in the strikes which commence hostilities, the industrial powers of both sides are destroyed and cannot recover for a period of years. In this case victory is going to depend upon initial military strength and available stockpiles

of supplies and equipment, plus military strategic considerations. There is a third possibility that neither side has the initial capability of destroying its enemy's economy to the extent where it cannot mobilize its industry and its men. The war, after the initial opening of hostilities, gradually reduces to a temporary standoff, while both nations mobilize their industries. For us that means a period of a couple of years.

The third possibility is the type of war in which we engaged in both World War I and World War II. In my opinion if either of the first two possibilities exist for us in the future — we are going to lose! My personal opinion is that if we have another major war, and it is a short war, we are sunk. Since the first two possibilities both concern only initial military strength plus factors of supplies and strategic considerations, they do not cover the whole of the area of "war potential." I would like to assume for this morning that the third possibility is the one which exists and the one which we are talking about, because that is the one which encompasses the whole field of "war potential."

Of course, there is a fourth possibility which I haven't mentioned. That is the possibility of a "cold war." But that is an entirely different situation — and I am going to sidestep it for the purpose of this talk.

What "time" period are we talking about? It is important we know that because nations are continually changing. Populations in most countries are increasing; some are decreasing. New factories are being built and old factories are becoming obsolescent, or obsolete. New deposits of minerals are being found; other deposits are being exhausted. In industry and in the military forces, technological changes are constantly making changes in the product, the efficiency and effectiveness of man's work. The alignment of governments and the stability of those alignments are continually changing. It is an entirely different thing to talk about the war potential of any nation or group of nations now than to talk

about the war potential of that same group of nations for a war which starts a decade hence.

So we have to put up two boundaries to our study of "war potential": first, the boundary of the kind of a conflict we are talking about; and second, the boundary of time. We have to fix our study, initially, somewhere in time.

I have been asked to say just a word about the importance of the study of war potential. From the viewpoint of national strategy, the study of war potential is very much like the "estimate of the situation," which has to be made by the tactical commander, or higher commander, in the field. The first thing you learn to do as a tactical commander is to learn that you must discover, to the best of your ability, the capabilities of the enemy and the capabilities of your own forces. Without a detailed and sound knowledge of those capabilities, you cannot make logical and effective strategic or tactical plans or tactical decisions.

The same situation exists on the national scale — unless we know the enemy's capabilities and our own capabilities, and know them thoroughly, we cannot make logical and effective national plans or national strategy, either in the field of diplomacy and politics or in the field of the military. We haven't done so well in the past with the subject of knowing the potential capabilities of various nations. If you recall, in 1942 President Roosevelt made a radio speech in which he said in effect: "Now — at this time — Germany, Japan, and Italy have reached their maximum possible production of ships, guns, planes and tanks." Then, you remember, in the period between 1942 and 1944, Germany increased its production of planes and ships three and a half times; it increased its production of guns over four times; and it increased its production of tanks almost six times. Our estimates weren't very good. And our estimates of our own production capabilities were almost as bad. If we are really going to be able to make logical plans, we have to know capabilities. We do know a lot

more now than we did in World War II — and we will probably never again fall into the trap which we fell into early in that war.

It is obvious, then, that this study is essential on the higher levels of Government. Is it important at lower levels? Well, of course it is. Every theater staff needs to know enemy capabilities and friendly capabilities. Staffs working on target designation systems must know enemy potential capabilities, that is, enemy “war potentials,” because they must select the targets which are going to weaken that potential in the most effective way and in the most rapid way. We didn’t do very well in our selection of targets against Germany, as you all know. We didn’t knock out its electric power system, which might have changed things a great deal — even early in the war. Now, I think we understand such things much better than we did before.

Even in local areas military commanders must know what is what about war potential; even there plans can affect the enemy’s power to exert force. I don’t think it is necessary for me to dwell on this any further. As you go more and more into this subject and gain an increased understanding of it, the value of it becomes so evident — you don’t even question it any more. The fact is that it is of value to every man of the grade of those sitting in this room and to every civilian in an important position in any Government agency dealing with international affairs at all. Furthermore, strangely enough, it is of much more benefit to, and much more used by, the strategists than it is by the logisticians. Strategists are really the ones who need it. Unfortunately, in our school system (I am giving you my own personal opinion now), it is the strategists who learn the least about this subject. The logisticians — who already know and have absorbed a great deal about it — learn the most, or are exposed to the most.

What is “war potential” made up of? You read books and see how a great many writers divide it up into “military,” “eco-

nomic," "psychological," "ideological," "sociological," and so on, factors — and these are all factors. But what do they do with the subject then? They talk about each of the factors — and then most of them stop. Actually, what we are interested in in a study of war potential is not only what the factors are, but how the factors are interrelated; how they get put together to make up the total of war potential. I am not proposing that any one system of breaking up war potential into factors — and there are several systems — is any better than any other. When you get into an argument like that, you get into semantics — and, usually, in the end get nowhere.

For this morning, then, let's look at "war potential" from an entirely different point of view. There are really two classes of factors, as I see it: There are factual elements — the things which, if you can get information about them, you can count; you can put them in statistical tables; you can add them, you can multiply them, you can divide them, you can subtract them — and come up with a weighted result at the end. There is another class of factors, or elements, which consist entirely of intangibles.

For instance, on the factual side, you have the resources of the Nation — the material resources, the factories, the land; you know how much the factories are producing at the present time, you can count on it; you know how many acres there are, you know how much of that acreage is in production and you can get up tabulations; you know how much steel is produced; you can count the manpower; you can count the size of the labor force; you can count the size of the labor pool — that is, the people of certain age brackets who are available to be put into that labor force, and you can get a pretty good idea of the percentage of that labor force which can be put into the Armed Forces.

On the other side, you have all those intangible things affecting the utilization of the maximum capabilities of the Nation as derived from its material and human resources; you have things

like education and ability of the people; its ideologies; its willingness to submit to the control of a central government; its religious customs — all of those many, many things which affect both the political and military sides of international conflicts.

The maximum capability of a nation might be compared to a rubber balloon, which you give a child to blow up. You know the maximum diameter to which this balloon might be blown without breaking, but you don't know to what diameter the child is going to blow the balloon. Perhaps the child loses interest and gets tired before the balloon is completely expanded. He has then blown the balloon only a fraction of what you consider its capability, as far as reaching a diameter is concerned. Perhaps the child hasn't the skill to blow the balloon to its maximum diameter — he doesn't know how to do it without letting the air leak out, so he blows it only part way. Here, again, the diameter of the balloon reaches only part of its maximum capability of having a certain diameter. Then you get a strong youngster without much skill — he blows away at that balloon and, finally breaks it. You have a balloon which has lost its capability for having any diameter at all.

The study of the war potential of a nation, or a group of nations, is very much like this problem of estimating to what diameter the boy is going to blow the balloon. You have to estimate the extent to which the people and the government will be able, or willing, to utilize the resources of the country. Are the people going to fight, struggle, work in the factories and produce to a maximum under various wartime conditions? If you are going to have any reasonable war potential, you have to determine the fraction of the maximum potential capability of the nation which is going to be actually utilized in case of a war.

Now, let's talk for a minute about what goes into the detailed makeup of war potential. I like to use some simple, visual analogy when I talk about an abstract subject such as this because I think it is retained better in our minds if we do. I like

to think of national power as an ax, wielded by a powerful hand. Within this ax — the head of the ax, the handle and the hand — we can consider are all the elements which go together to make up war potential.

I am going to talk first about a single nation because that is simpler. You can see in this picture that the Armed Forces are really only a small part of the ax, but they are a vital part, the cutting edge. But the cutting edge is useless without the weight of those things in the head which serve to drive the edge into whatever material it strikes. Without the handle, the head of the ax is useless because it is the handle that allows manipulation of the head. Without the hand to pick it up, the ax lies unused. Let's see what makes up the weight of the head of the ax. Directly behind the Armed Forces, we have the munitions industries — those industries which produce only a minor quantity of things in time of peace. They produce the things which are unique to the use of the Armed Forces. These are the industries that have to be expanded a hundredfold in an emergency situation — by expansion, by the conversion of other industries, and by the creation of entirely new industries. These changes involve the training of people to man those industries.

Behind the munitions industries, we have the manufacturing industries — the industries that take the raw materials and turn them into component parts and end items, both for the civilian economy and for the Armed Forces.

We have to find out, if we are making a study of war potential, what those industries are producing, what they can do for us in production for war emergency, and how they can be expanded or converted.

On the other side, we have service industries — that is, the transportation industries which carry the raw materials to the factories and finished items to the consumers; the communications industries, the doctors, the lawyers, the wholesalers, the brokers, and a myriad of other industries which give service to the whole

economy. Most of them are essential in peacetime and have to be expanded in wartime. A few of them are nonessential. We have to figure out the ones which are nonessential and see whether we can get any parts of our wartime labor force through the cutting out of the unessential services. That unessential part applies, also, to the manufacturing industries of course.

Behind all of these industries — the manufacturing, munitions, and service industries — are the extractive industries. These are the industries working the farms, the mines, the forests, and the oil wells. They get the materials from under the surface of the ground and from the surface of the ground and furnish them as raw materials to the manufacturing and munitions industries. When we have shortages of materials, we have to depend upon our foreign economic relations — our economic arrangements with other nations — to get those materials in time of war.

There is no nation which is self-sufficient with regard to resources. Our position with regard to many of the resources, especially minerals, is far from good and getting worse all the time. If we can't get things — for example like manganese, without which we cannot make a ton of volume steel, we are going to be in a pretty sorry way if war comes. So, we have to set up and maintain our lines of communication and our relationships with other nations which will enable us to get the raw materials that we lack.

Behind all of these other things in the head of the ax, is the land itself; that is, the climate, the soil — its physical characteristics. What will it produce in various parts of the world? What are the effects of the size, shape, and location of the various countries which we are talking about? A long, narrow nation like Chile is nowhere nearly as efficient as a relatively compact nation — like France — either in internal communications or in the uniting of its people. So we have to consider all aspects of the land itself.

In discussing natural resources I touched only on material resources. I did not mention our equally important human resources. Our other resources are useless without man to develop and use them. In a study of war potential, we have to find out everything we can about the human resources — how numerous they are; how much ability they have; how much skill they have; how many are coming into the fourteen-year group each year in the future; how many are in the age group bracket in which is included those individuals acceptable for military service; and how much of the age group bracket acceptable for military service must stay with industry, rather than go into the Armed Forces. If we are going to get our maximum support for the Armed Forces, we must leave a major part of our labor force with industry. It doesn't do any good to pull all the skilled manpower away from industry; the Armed Forces are helpless if we do.

I said that the head of the ax was useless without the handle to manipulate it. Let's call the handle of the ax the Government. The Government is going to have a great effect on our war potential. The stability of the Government and the effectiveness of the Government in dealing with both international and domestic situations have a vital effect on national power. I am not talking about the type of government here, either, because in this type of study we are not concerned with the type of government. Whether we like the type of government or not, whether it is Communistic, totalitarian, socialistic, democratic, Federal or any other kind is in itself immaterial in a study of this kind. What we want to know is how effective it is; how it is going to get the people together and cause them to work for the Government's aims; how effective it is in planning in international relations and for domestic development. The effectiveness of government is one of the keys to the utilization of the maximum resource capabilities of the Nation, both human and material.

I said that without the hand to pick it up and wield it — the ax is useless. That hand is the other one of the determining

things about the utilization of our capabilities. The hand represents the will of the people to make the most of a nation's maximum capabilities. To what standards of living will the people of each nation allow themselves to be lowered and still put their maximum energies in supporting a government's objectives in time of total war.

I have run over this very rapidly, because of lack of time. What I have said is just one method of looking at the subject of "war potential" and the things it contains. The elements dealing with manpower, foreign relations, government, psychological attitudes, will —are all intangibles. But if we study all the elements within this ax and hand, we can come up with a total of the material resources of the Nation which are available and then get some idea of the probable utilization of those resources under different types of conditions. We can find out a good bit about the effectiveness of use of these resources.

There is one thing that we sometimes forget, though — that is, that only a part of the Nation's resources are available for the direct support of the Armed Forces. The Armed Forces are useless without the supplies of materiel and equipment which are furnished by the civilian population. We must maintain our civilian population at some level. We have to give them what is really a very large fraction of the total production of the goods and services of the Nation. That fraction varied, say, from 40 percent to 60-65 percent for different nations in the last war. We had available only 40-45 percent. Different people give you different figures, but it was somewhere around 40-45 percent of our total for the support of the Armed Forces. The rest of it had to go to the civilians. Because in any economy the worker can't work unless he can get to the factory. Our distribution and our growth of suburbs around manufacturing areas have been such that we depend upon private transportation for the worker. We don't have a central transportation system which will take care of him. So even in time of total war, we have to furnish a percentage

of the workers with private automobiles; we have to furnish them with gasoline; we have to furnish them with automotive parts. Our distribution system for food in the United States is worked out on the basis of each of you having in your house a small refrigerator, a small unit of refrigeration. Our food distribution in the United States would fall down completely if we threw out those small-unit refrigerators. So we must have them in time of war, we have to maintain them, and we have to keep them up. You can look at thousands of problems like that one with which a planner is faced in the United States. Of course it isn't so bad in Russia, for instance, where you can shove the population down to, say, a diet of black bread and beans and maybe one suit of clothes every year or so. The Russian worker lives in barracks next to the factory and can walk to work. He doesn't need quite such a large percentage of the productive capacity of the nation to do the same amount of work that our population does. That is a very important thing to bear in mind — and I am going to come back to it again later.

So far, we have been discussing, principally, a single nation. To be practical, we have to talk about a group of nations because in this modern world that is the way the exercise of eventual power is carried out — by one group of nations against another group of nations. The war potential of a group of nations is not the sum of the war potential of the various nations involved. Some of the nations will be weak — and those weaknesses must be made up from part of the strength of the stronger nations. Weaknesses in strategic location have to be protected. Lines of supply have to be protected. We do have in some of the more powerful nations surpluses which can be given to some of the other nations without very much effect on the total war potential of the stronger nations. This tends, of course, to raise the potentials of the single nations.

We have inherent weaknesses in any grouping of nations because among any group of nations there are differences in ideals,

in approaches to political, military, psychological, and economic matters which make it impossible to get the decision which is probably the most effective decision. The decisions have to be weakened because they are compromises; they have to be reached through compromises. This is true to a considerable extent, but for different reasons, in a group of totalitarian nations where one nation is apparently running the rest of the show. You have to consider both the advantages and the disadvantages of a combination of nations.

I have discussed so far, principally, the current resources of any group of nations; that is, the capabilities of the nations for fighting a war in the immediate future. You get into another, more difficult problem when you start talking about wars years or decades hence because nations experience changes. But you find out through trends the things which will tell how nations are developing, what their war potentials may be in the future. Of course, the further you get into the future, the more you are guessing; you can't get away from that. You can examine things like projections of the size of the population and size of the labor force — demographers are doing that sort of thing all the time. Through the study of educational systems you can see how the skills and abilities of the population are developing or changing. You can get some idea of the changes which are taking place through technological progress. And if the study doesn't involve something too far in the future, you can get a good many estimates as to the new factories which are apt to be built during that period and the increase in production that will take place. You know the long-term trend of most nations in the expansion of their gross national products; that is, their total production of goods and services, which for us, on a long-term basis, has been running about 3 percent per year for a good many years. So, if you are talking about a war to start years or decades in the future, you have to apply to what you find out about a war starting tomorrow all you can gather about the trends which influence the

changes in the total capabilities of each of the nations you are considering.

I am going to talk for a very short time about methodology, the methods that are used. I am not going to say very much because I think that most of what I know about it is expressed in that monograph on "Economic Potential for War," which I wrote rather hastily last March and which I think has been made available to you. I am going to cover this on a very sweeping basis, then. I am going to talk about spreading the study of "economic potential" into blocks. I am going to name the blocks one after another, but that doesn't mean that the student considers only the things in the first block before he starts in with the second, of course. He does a lot of his study concurrently.

One method of approach that you can take is to study first, look up and get all the information you can, on the material resources of the country; what the factories are producing in each country; what their maximum capacity for production is; what their mines are producing; how much food they produce. Do they need more food? What do they have to import? You consider all of those factual things about the production capacity of the nation at the present time for each nation you are considering. Most of this you can get through open information. You don't need to have access to a lot of cloak-and-dagger stuff for this. Even on Russia, most of it comes from open information. Of course, there are limited areas where the information is hidden — and we are just not going to get it! But most of it is available in the United Nations publications, newspapers, periodicals — it is the type of thing a nation can't hide. With the exception of a very small group of men in the United States, most of our students think that the Russians can't hide theirs — and in the past at least have not been trying to distort the information they put out.

Your second block is a look at your human resources — the size of the labor pool; the size of the Armed Forces and the labor

force which can be derived from that labor pool. You examine the ability and skills of the population of each country.

These two blocks give you a factual basis to start out on. But they only tell you how much each country, or group of countries, is producing at the present time of the items which they are now producing. Those aren't the items which you want produced in time of war, usually. So you have to get into a more difficult aspect now. As your next block, you have to try to find out how, through expansion and conversion, these factories can be made to produce the things which are needed in time of war; how fast factories now producing those things can be expanded; how fast new factories can be built; how fast factories building nonessential items can be converted to the production of essential items, and how much they can produce; how fast your labor force can be trained to operate the new production lines; what resistance there is going to be to the people moving from one locality to another — and that is not a minor problem, it is one of the toughest problems there are especially in Europe; and how people will move from one job to another, from one type of work to another — whether they will be able to do the other job or willing to do it. All of those things are in the intangible field, but are the things which must be applied to the factual information to set up your block of what the maximum production is that the country can probably have in terms of support for the military forces.

So, you have that block of maximum support through production and you have the block of expansion of the labor force — which I mentioned in connection with the last one, but which really should be a separate study. You will get more of that, I am sure, in your Manpower Course so I won't discuss it now, except to say that even in a totalitarian government you can't always make those shifts in the labor forces that you would like to make. You remember that before 1936 Germany had the K.K.K. organizantial programs (I won't attempt to pronounce

the German words meaning "kitchen, children and church") in order to relieve unemployment by getting the women out of the factories. Then along came the war. The Germans wanted to get those women back into the factories, but the population had been conditioned by the other propaganda and programs to a point where neither the men nor the women wanted the women back in the factories. For purely political reasons, a totalitarian government had to accept the fact that women were not going back into the factories, although they paid a terrific economic price for it. So there are problems here that have to be gone into — intangible things that have great effect upon a country's war potential.

Then, we find out something about the probable will of the people to support the Government because, after all, you can have all the capabilities, all the resources of the world, but if the people decide they don't like this war and are not going to fight hard in support of it, are not going to struggle, are not going to work, and are not going to accept low standards of living — your war potential is pretty low! Your maximum capability is high, but your actual war potential may be practically nothing. That has occurred in history, too, if you think back.

As the final block (and this is a stumbling block that most people very nicely sidestep and I am not going to say anything more about it other than the fact that it exists), if you are going to make a complete study and carry the analysis of war potential to its ultimate conclusions, you should attempt to estimate the probable damage to industries and to your Nation which is going to take place in the initial attacks in the opening of hostilities. That gets you into pretty much of a dreamworld — that is why people don't like to talk too much about it.

After a study of all of these blocks and all of these factors, you do come up with something, not numerical — "this Nation is three point six times as strong as that one" — but you do get some pretty good ideas in the back of your mind as to what the relative strengths of various groups of nations are. The more

experienced you are, the longer you study these nations, the more intimately you get to know them, the greater access you have to all of the facts — the more acute is going to be your opinion.

I think I have said enough to show you that, although the statistical side is extremely important and essential, you cannot arrive at a final comparison by taking statistical data, alone. That is one place where I think columnists are doing this country a great disfavor because many of them are showing tabulations which give the impression that this country is three or four times as strong in its productive resources as the Soviet area, and the free world is much, much stronger. This would be very comforting if it were true, but an analysis of these facts shows it definitely is not true. For instance, they show that we produce 1.2 million tons of steel against Russia's much smaller production. That should be very comforting to us. But we forget the fact that the percentage of the steel required to support the civilian population, the essential support for the civilian population in Russia, is very, very low. They need some, but very little, whereas, in the free world, we need a major part of all our steel production just to support our civilian population.

I thought I would say a few words in concluding (and they are only going to be a few) about the progress toward a logical methodology in this subject in the United States. Unfortunately, we haven't made a lot of progress. The subject is brand new. In the modern world, before World War II, people didn't consider total war; that is, the involvement of entire populations as a part of fighting a war, except for those countries which were actually overrun. The civilian population wasn't considered a part of the fighting force in a war. In World War II, of course, throughout Europe all of the countries were in a total war status while we approached it. But we only approached it — because, actually, our standard of living during World War II rose continuously; something that probably will never happen to us again. Next time, we will probably be in a total war situation. So, a real

study of this war potential — your “total war” situation — only started after the last war.

We do have some obstacles which have made this study difficult. The one major one is that in so far as the Soviet areas are concerned, until recently we had very few students who really were expert in the subject. Young men weren't interested in studying Soviet areas as graduate work to get their doctor's degree. There is a wealth of information which has not been analyzed due to this earlier shortage of students of the USSR. I do not mean that no progress is being made, because a great deal of progress is being made — and in the last couple of years it has been made very fast. We really are getting somewhere; but the study, after all, is still in its infancy. Actually, military officers have a great advantage in this subject, an advantage over many people who are actually making the governmental studies because if you talk to them you will find that most of the economists and political scientists working in this field are experts. They are experts in a very narrow field. Most of them have great difficulty in backing up and looking at the overall situation.

For instance, one economist (I have had quite a few of these experiences with them) may have been working, say, on the machine-tool industry all his life. He comes into a government organization and he generally feels that if we can just solve this machine-tool problem and get the comparison between the machine-tool production in the Soviet area and in our country, we have solved the economic war potential problem. That is the way they feel. Sometimes we forget that an expert is sometimes defined as “a man who avoids the small errors as he sweeps on towards a grand fallacy.”

Actually, any one of you can add a great deal to this subject because you tend to look at it from the “overall.” After all, it is worth while to remember that in the final analysis each of your own respective necks in another war is going to be largely dependent upon the success which we have in estimating enemy

and friendly capabilities and basing our planning and our strategy upon those capabilities.

I would like to leave, then, just this thought with you: Any analysis we make must consider the factual information and the tabulations which mean a great deal to us and tell us a lot about all the nations we are considering; but, that same information can lead us far astray unless we bring in with it, intertwine with it, and apply to it all of the intangible factors that I have been talking about today. You might just remember in the back of your minds that the ax lies unused without a hand to wield it.

**BIOGRAPHIC SKETCH**  
**Colonel Bruce D. Rindlaub, USA**

Colonel Bruce D. Rindlaub, USA, attended Yale University and North Dakota Agricultural College, and was graduated from the U. S. Military Academy in 1929 with a B. S. degree. He later did postgraduate work at the University of California where he received a B. S. degree in 1933 and a M. S. degree in 1935, both in civil engineering. Service schools attended also include Primary Flying School, March Field, California, 1929-30; Engineer School, Fort Belvoir, Virginia, 1936-37; and Industrial College of the Armed Forces, 1949-50.

From 1930-41 Colonel Rindlaub served successively with the 2nd Engineers, Fort Logan, Colorado; the U. S. Engineering Department, Pacific Division; the Works Progress Administration; the 14th Engineers, Fort McKinley, Philippine Islands; and with the ROTC unit at Texas Technological College. At the beginning of World War II, he was serving as District Engineer in the Boston district. From 1944 until 1949 Colonel Rindlaub filled various key positions in Army Engineering in the Pacific and Far East. He was on the faculty of the Industrial College of the Armed Forces from 1950-54. In July of this year he was assigned as Chief of Staff, Sixth Armored Division, Fort Leonard Wood, Missouri.

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Col. H. D. South, USMC  
Capt. H. Payson, Jr., USN  
Capt. R. J. Fabian, USN  
Capt. O. E. Hagberg, USN  
Capt. L. P. Ramage, USN  
Capt. L. B. Cook, USN  
Capt. J. C. Toth, USN  
Capt. R. H. Weeks, USN  
Capt. L. W. Smythe, USN  
Col. R. C. Walton, USMC  
Col. W. H. Duplantis, USMC

Col. J. R. Little, Jr., USMC  
Col. R. M. Tomkins, USMC  
Col. R. C. Kugel, USAF  
Col. S. S. Richard, Jr., USAF  
Col. J. S. Pirruccello, USAF  
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Capt. H. C. Spicer, Jr., USN  
Capt. W. A. Dean, Jr., USN  
Capt. J. E. Johnson, USN  
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Cdr. J. H. Iarrobino, USN  
Cdr. M. A. Merrill, USN  
Cdr. A. G. Russell, USN  
Cdr. J. W. Clinton, USN  
Cdr. W. D. Carter, USN  
Cdr. D. D. Adams, USN  
Cdr. J. C. Coulthard, USN  
Cdr. P. E. Pugh, USN  
Cdr. E. W. Seitz, USN  
Cdr. E. Hord, Jr., USN  
Cdr. R. H. Mills, USN  
Cdr. W. J. Moran, USN  
Cdr. W. B. Brandon, USN  
Cdr. J. W. Conger, USN  
Cdr. R. D. Nye, USN  
Cdr. L. B. Green, USN  
Cdr. W. B. Howell, USN  
LCdr. W. J. McKenna, (SC), USN  
LCdr. P. Lumpkin, USN  
LCdr. J. J. Kinsella, USN  
LCdr. A. M. MacDonald, (SC), USN  
LCdr. B. G. Fold, USN  
LCdr. R. F. Newsome, Jr., (SC), USN  
LCdr. E. O. Swint, (SC), USN  
LCdr. J. S. Swope, USN  
LCdr. D. K. Traxler, USN  
LCdr. N. E. Thurmon, USN  
LCdr. F. M. Barbero, (SC), USN  
LCdr. W. T. Peach, III, (SC), USN  
LCdr. W. C. Blattmann, USN

LCdr. E. E. Kerr, USN  
LCdr. W. K. Coker, USN  
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LCdr. W. M. McCulley, Jr., USN  
LCdr. C. K. Ruiz, USN  
LCdr. R. G. Zimmerman, USN  
LCdr. J. C. Haynie, Jr., USN  
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LCdr. A. N. Lasater, USN  
LCdr. F. A. Meyer, USN  
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Maj. R. L. Urquhart, USAF  
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Maj. R. E. Dunlap, USAF  
Maj. E. R. Kregloh, USAF  
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LCdr. N. K. McInnis, USN  
LCdr. R. N. Glasgow, USN  
LCdr. J. C. Rock, USN  
LCdr. C. R. Largess, Jr., USN  
LCdr. J. W. Pearson, USN  
LCdr. I. Smith, Jr., (SC), USN  
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LCdr. H. K. Manship, USN  
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LCdr. C. W. Sims, USN  
LCdr. E. C. Hipp, Jr., USN  
LCdr. W. J. McVey, USN

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LCdr. A. W. Adams, Jr., USN  
LCdr. A. Thomas, USN  
LCdr. L. D. Cummins, USN  
LCdr. H. S. Barbour, USN  
LCdr. A. V. H. Bacon, Jr., USN  
LCdr. W. L. Siple, USN  
LCdr. J. B. Stetson, USN  
LCdr. J. G. Ward, USN  
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LCdr. H. C. Culbreth, USN  
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Lt. A. H. Cummings, Jr., USN  
Lt. G. W. Ellis, USN  
Lt. R. L. Metzger, USN  
Lt. W. P. Gatewood, USN  
Lt. J. O. Lyon, USN  
Lt. H. A. Borgerding, USN

## RECOMMENDED READING

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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 these of interest.

Recommendations are made on the basis of interest only and are not intended as an endorsement of the author's views by the Naval War College.

Many of these publications may be found in ship and station libraries. Some of the publications not available from these sources may be obtained from the Bureau of Naval Personnel Auxiliary Library Service, where a collection of books is available for loan to individual officers. Requests for the loan of these books should be made by the individual to the nearest branch of the Chief of Naval Personnel. (See Article C-9604, Bureau of Naval Personnel Manual, 1948).

- Title:** *The War at Sea (Vol. 1)* 644 p.
- Author:** Roskill, S. W. London, H. M. Stationery Office, 1954.
- Evaluation:** This is the first of three planned volumes covering the naval aspects of World War II in the British official History of the Second World War. About thirty volumes are planned in the series and four have been published. The war at Sea, 1939-45, Vol. 1, covers the period from the outbreak of war to the sinking of the Prince of Wales and Repulse off Malaya in December, 1941. This volume is authoritative and complete without too many 'nuts and bolts.' It has numerous excellent maps and charts. Captain Roskill presents differences of opinion within the top command frankly, and they were many in the early years of the war. Most readers will be surprised at the extent and range of the German warship and disguised merchantship commerce raiding operations, especially before the sinking of the Bismark in May, 1941. This is an excellent presentation of British naval strategic plans and operations in the early years of World War II.

Title: *Strategy for the West.* 180 p.  
Author: Slessor, John. N. Y., William Morrow & Co., 1954.

Evaluation: This small book is packed with thought-provoking material and represents the thoughts of one of the world's leading airmen, until recently the Chief of Staff of the Royal Air Force. The scope of the book can best be described by the chapter headings: *The Real War, The Enemy, The Long Haul, The Strength We Need, The Primary Arm and Air Power and the Problem of Europe.* In his book the Air Marshal discusses the many facets of the current situation and develops his "Strategy for the West," a nine-point plan based on air power as the primary, but not exclusive, arm of national power to be used as the threatened retaliatory power to prevent war if possible and to win it if necessary. In this volume we have a responsible officer presenting his considered views in a logical and thought-provoking manner. He may be considered by some to be overly partial to his particular service but that is only natural in any military person and, in this case, is certainly not detrimental to the work as a whole.

Title: *The Mediterranean and Middle East, Vol. 1.* 506 p.  
Author: Playfair, L. S. O. H. M. Stationery Office, 1954.

Evaluation: This is a beautifully written history of the area, including East Africa, from a "combined" (British) point of view. Heretofore little-known, diplomatic, background material and international political considerations surrounding Britain's conduct toward France, Italy, Greece, Turkey, etc., in the period from 1936 to February, 1941 is particularly excellent. Britain's thinking with respect to Turkey and its influence on the defense of Greece is excellent. Details of the British ultimatum to the French at Mers-El-Kabir and Admiral Cunningham's conduct of the affairs with French units at Alexandria, simultaneously, is fine. Well-documented, with excellent pullout maps and well-chosen photographs, it is outstanding as a text on the war in this area and as reference material. It parallels Field Marshall Rommel's treatment.

Title: *General Dean's Story.* 305 p.  
Author: Dean, William F., Major General, U. S. A. (as told to William L. Worden). N. Y., Viking Press, 1954.

Evaluation: A vivid, dramatic, yet modest account of the events leading up to, and the capture of, General Dean and his subse-

quent imprisonment by North Koreans until his release three years later on 4 September 1953. General Dean gives an honest, frank, forthright, unembellished report of his experience as a prisoner of the North Koreans, kept separate from all other prisoners of war. His continual movement from one place to another, the fear the Koreans had of his being seen by anyone, his treatment, and his observations of his captors and guards and the impact of communism on them, are all treated in simple, straightforward language. He criticizes his own mistakes and makes no claim for heroism, but in telling of his experience he reveals himself as a man of great strength and stamina both physically and spiritually.

- Title:** *N.A.T.O. and Its Prospects.* 110 p.
- Author:** Warne, J. D. N. Y., Praeger, 1954.
- Evaluation:** The author traces the development of N.A.T.O. as a back-drop for pointing out its major problems in terms of military posture, national sovereignty and economic stability vis-a-vis the Soviet Bloc. He postulates the future of the Atlantic Community in terms of a military alliance with certain possibilities of a wider union. Included is a discussion as to whether the Soviet goal is world domination. In the light of this discussion he comments on the adequacy of a policy of containment and makes certain observations with respect to a policy of liberation. To someone unfamiliar with N.A.T.O. this book is of value as a concise statement of the major problems arising from East-West cleavage, together with a brief discussion of containment and liberation as two courses of action for their solution.

## PERIODICALS

- Title:** *Ground Tactics in an Atomic War.*
- Author:** Rowny, Edward L., Colonel, U.S.A.
- Publication:** COMBAT FORCES JOURNAL, August, 1954, p. 18-22.
- Annotation:** This article is one of an ever-increasing number proposing new methods of application of ground power. They all are of interest to any service officer because of the direct and indirect effects on staff and command techniques at all uni-service or joint levels.

Title: *Middle East Defense: A New Approach.*  
Author: Spain, James W.  
Publication: THE MIDDLE EAST JOURNAL, Summer, 1954, p. 251-266.  
Annotation: An account of current American efforts to ensure the military defense of the Middle East based on the policy of strengthening countries in the "northern tier."

Title: *Collective Action in Asia.*  
Author: Radford, Arthur W., Admiral, U.S.N.  
Publication: CONGRESSIONAL RECORD, June 29, 1954, p. A4726-A4728.  
Annotation: An address delivered before the National Convention of the Red Cross, Los Angeles, June 16, 1954, emphasizing the need of teamwork and collective action of free peoples in the execution of national security plans.

Title: *N.A.T.O. and Atomic Strategy — I: The West Plans Its Defenses.*  
Publication: INTERAVIA, No. 7, Vol. IX.  
Annotation: This entire issue is of value to all officers since it is devoted to N.A.T.O. aviation. This issue, entitled "The West Plans Its Defenses," is recommended to aviation officers particularly in order that they may appreciate some of the international aspects of aviation today.

Title: *Churchill Was Right.*  
Author: Baldwin, Hanson W.  
Publication: THE ATLANTIC, July, 1954, p. 23-32.  
Annotation: An analysis of Churchill's thinking in regard to the military and political strategy of World War II as revealed in his account of the war.