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## Introduction to Economic Mobilization

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## **FOREWORD**

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## **INTRODUCTION TO ECONOMIC MOBILIZATION**

### **The Economic Basis of Warfare**

A Lecture delivered by  
*Major General A. W. Vanaman, U. S. A. F.*  
at the Naval War College  
24 September, 1951

Three concepts are essential to the study of the economic basis of warfare. The first of these concepts—logistics—in the traditional sense had to do with the transport, quartering, and supply of troops in the field; however, recent combat experience has greatly expanded the meaning of the word. It is appropriate and at the same time indicative of the effectiveness of Navy Department study in the field of logistics that probably the best current definition was developed by Vice Admiral E. D. Foster. It reads:

“It is the function of logistics to bridge the gap between two normally alien spheres of activity; to make intelligible to the producer the needs of the military commander; and, conversely, to inject into the calculations of the strategist an appreciation of the limits of the materially possible. Logistics is, at once, the military element in the Nation’s economy and the economic element in its military operations.”

There could hardly be a more apt and vivid way to express the essential elements of logistics.

The second and third definitions are from the “Dictionary of United States Military Terms for Joint Usage.” The first of

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1

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these—national strategy—is defined as, “The art and science of developing and using the political, economic, and psychological powers of a nation, together with its armed forces, during peace and during war, to secure national objectives.” The language of this definition is significant. It will be noted that national strategy involves the use of not only political and military forces, but also the “economic” and “psychological” assets of the nation in attaining its ends. This is a clear extension of the duty areas embraced by the responsibilities of command in the armed forces—and acceptance of the fact that national power rises from the ability to produce, as much as from the ability to recruit armed forces. Further, it should be emphasized that the concept of national strategy is not limited to wartime. National strategy must govern the conduct of the political and military institutions of the nation in both peace and war, since the governmental, military, and economic successes and failures in terms of peace lay the basis for national potential in the event of war.

The third definition—economic mobilization—is simply, “The process of preparing for and carrying out such changes in the organization and functioning of the national economy as are necessary to provide for the most effective use of resources in a national emergency.” Here again, stress must be laid upon the fact that economic mobilization is not necessarily limited to a war emergency. It should be, on the contrary, a continuous process, conducted by both the military and civilian agencies of the government in peace and war. Its strength lies in its orderly, long-term development. Its effectiveness is reflected in the national potential for defense and in the support it gives to national policy.

These three basic concepts express the economic and logistic aspects of national defense. Each concept rises from the others. Each forms a part of an harmonious security program. In effect,

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the purpose of economic mobilization is to provide the economic, that is the productive resource, base of logistics. A well-knit logistic pattern in turn provides for the utilization of the nation's armed forces with the highest effectiveness. And, completing the proposition, the military establishment, together with the political authority and economic power, supports national strategy, which is directed to secure the needs desired by the American people—a free, prosperous, and democratic world; a world in which the great principles of American life will find the conditions favorable to their fullest development.

**The Twentieth Century Revolution in Warfare**

Definitions are necessary since they establish a uniform understanding of basic concepts. But there is more to economic mobilization than the defining of terms. Economic mobilization is not the product of classroom studies—nor of ivory tower theorists. It is the result of the hard facts of economic and military evolution through the years.

In all ages war has affected and in turn been affected by the prevailing economic systems. Armed forces must be recruited, equipped, supplied, and paid. The costs of war must be met. A part of the product of the peacetime economy must be diverted from normal uses to the purposes of combat. In the days of small armies and short campaigns, war frequently brought economic ruin to the producers and merchants of the nations involved. In our time, however, the needs of military operations have provided a tremendous market for goods and services of all types, and business has expanded rapidly in wartime. In fact, wartime is usually a boom period in business, followed, sooner or later, by depressions during the readjustment to normal economic life.

This trend was not clearly established until World War I,

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when there occurred a revolution in the relation of war to the economic system. The huge scale on which the First World War was fought, together with the increasing complexity and volume of material, forced the major powers involved to resort to drastic measures in order to provide the needed supplies. Since the compelling demand was for more and more munitions, attention was fixed primarily upon expanding the production of manufacturing industry. During World War I the productive resources of the great powers were channeled into war-supporting activities to a degree unknown before that time. To attain this end, extraordinary economic controls were instituted by governments. This process was termed industrial mobilization. As the measures taken to expand industrial output affected other sectors of the economy, further controls became necessary so that by the end of World War I the major powers were approaching mobilization of their entire economies for the purposes of war. When World War II brought the requirements of blitzkrieg and global war, together with the extension of the combat zone through aerial warfare to include national productive areas, the major powers were forced to place their economies on a complete war basis.

There was increasing recognition of the fact that industrial mobilization, the objective of wartime procurement programs, was only the more obvious and striking phase of the transition from a peace to a war economy. The economy is more than manufacturing industry. It is agriculture, mining, lumbering, and fishing. It is transportation, communications, and power. It is money, banking, the commodity and stock exchanges, and the whole complex system of distribution under the price system. It is the sum of all the varied institutions, behavior patterns, and attitudes that comprise the system of producing and consuming wealth.

To mobilize all these resources, institutions, and attitudes for

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the prosecution of war required more than a conversion of manufacturing industry from civilian to military goods. It required more than a corresponding diversion of manpower and materials from peacetime to wartime channels. War can no longer be waged successfully simply by operating the peacetime economy with a greater load and at a somewhat faster tempo. With great industrial powers aligned against each other, the fullest and most effective use of all the resources of the nation is required. A limited mobilization of resources, a commitment of only surplus manpower and productive capacity, the imposition of military on top of civilian requirements, without serious disturbance of the latter, are simply invitations to disaster. The peacetime economy cannot stand up under the tremendous strain imposed by wartime demands. The alternatives are drastic changes in the economy of its breakdown. Whether the transition to a war economy is accomplished, rapidly according to well-integrated and rational plans, or more slowly through a series of compromises and adjustments made in response to the pressures of a developing crisis, the end result—the organization and functioning of the economy on a new and higher level with new goals and incentives, new controls, and new organizational arrangements—is much the same.

### **The Nature of the War Economy**

The objective of a war economy is the full and efficient use of all resources available to the nation. The attainment of this objective requires careful planning and close coordination. In peacetime the determination of what goods shall be produced, of what quality, in what amount, and at what time is dependent upon the functioning of the market place and the price system. There is no central planning and little direction. Coordination of supply and demand is effected in the market, operating through all the elaborate mechanisms of merchandising, advertising, banking and credit, the

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exchanges, and the habits and interests of millions of individuals. The motivation is enlightened self-interest; the goal is profit. Under the normal functioning of the market, supply and demand are most of the time, and for most goods, not very far apart, with supply tending to lead demand in what is commonly termed a buyers' market. In the peacetime economy, the role of government is primarily regulatory and essentially negative. Planning is the function of individual concerns and the planner operates within the very restricted limits of his own economic interest.

In wartime, the free play of competition in the open market, which normally directs productive resources into the channels where the demand is greatest and away from those goods and services which are less desired, breaks down as an effective regulator of the economy. It breaks down because almost overnight, demand for the wide range of goods necessary to equip and supply enormously expanding armies becomes in effect unlimited. It breaks down, too, because this military demand is concentrated in the hands of a single great customer, the government, which, with its taxing power and under the pressures of the emergency, is not subject to the normal restraints of the free-enterprise system. In the terrible urgency of arming the nation quickly, demand far exceeds any conceivable immediate expansion of supply. In addition the concurrent demand for goods by individual citizens, stimulated by the full employment and general prosperity that accompany present-day mobilization, increases the pressure on the productive capacity of the nation.

If under these conditions sellers were allowed to exploit their advantage without limit or restraint, prices would move sharply upward in what would soon become a dizzy spiral, throwing the whole market into a state of confusion, with disorganizing effects upon the entire economy. Sooner or later this would result in a breakdown of production, and public morale would be seriously undermined.

**RESTRICTED****The War Economy Is a Planned and Directed Economy**

A most significant and distinctive characteristic of the war economy is that it functions under the direction and control of the central government. Under free enterprise, the war economy, in contrast with that of peacetime, must become to the extent necessary, a planned and directed economy. Only by the most careful planning and control is it possible to devote from one-third to one-half, or even more, of the national product to the demands of war and at the same time keep the civilian economy in a state of productive efficiency. Centralized authority is indispensable for relating the over-all requirements of both the military and the civilian to the aggregate productive capacity of the nation. With total requirements intelligently balanced against total capacity, the productive factors of manpower, facilities, equipment, raw materials, and components can be distributed in such a manner as to insure the delivery of war material and civilian goods of the kinds needed, in the amount and at the time required, and in the order of essentiality. Hundreds of major industries, tens of thousands of facilities, and millions of workers of many and varied skills must be coordinated into a smoothly working whole, with a minimum of waste and lost motion. The nation must in effect be transformed into a single gigantic factory producing, under government coordination, the goods and services required by the armed forces and the civil population.

**Control in Economic Mobilization**

The controls by which the government directs and coordinates the war economy fall into several main groups. First, there are the controls which bear directly upon industry and by which the diversion of productive capacity into the appropriate war channels is effected. These range from mere persuasion to the seizure and operation of plants by the government, but, normally, they consist for the most part of indirect compulsion, priorities, and allocations

**RESTRICTED****7**

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in various forms. Such devices make available to producers, in the order of the essentiality of their products, raw materials, machine tools, equipment, components, services, and even capital.

A second group of controls is used for the distribution of manpower. Here the range is from publicity, employment services, and training programs at one end to universal service at the other, with various intermediate methods of allocations and referrals, wage and hour controls, and the like.

A third group of controls is that which places foreign trade—exports and imports alike—either directly in the hands of the government or under a system of licensing. Only those exports and imports are allowed which will contribute directly or indirectly to the strength and successful functioning of the war economy.

Still another group of controls has to do with the duty of the government to maintain both the physical condition and the morale of the civilian population. Such are, the rationing of scarce and essential goods and services, and the adoption of rent and price controls.

### **Requirements in Economic Mobilization**

For the armed services, requirements are the starting point in economic mobilization. The determination of military requirements arises from a detailed analysis of the accepted strategic-logistic plan. This plan, basic to any effective national military action, implements the objectives of national strategy. It does this by determining, on the one hand, the strategic operations best calculated to realize the objectives desired, and, on the other hand, establishing the total economic potential available to the nation in support of its national policies, a factor simultaneously determining and implementing the broad strategic plan. From this calculation

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issues the framework of over-all armed forces needs in terms of land, sea, and air units necessitated by the accepted operations. The requirements program, at its outset, involves the determination of the numbers of men, planes, tanks, ships, guns, uniforms, and the hundreds of other military end items to implement the plan. This in itself is a complex, difficult, and time-consuming task. But it is only the first step in the process of requirements determination. The supply branches of the armed services must further develop the requirements pattern. They must calculate the number of productive facilities, the amount of materials, and the number of critical components required for the production of the needed military end items.

The process does not end here. To the national military requirements must be added foreign aid requirements—all the goods, equipment, materials, and other items that are needed to support our allies and those neutral countries whom we find it expedient to aid.

Finally, it is necessary to determine what is required to keep the civilian population and essential civilian industries and services in a state of productive efficiency. In some respects this is the most difficult problem of all, because it is so hard to determine where to draw the line between civilian desires and actual civilian requirements.

Thus, the proposition of over-all requirements is a problem in the balancing of material needs with the national economic potential. Strategic planning cannot lay down requirements which go beyond the capacity to supply manpower and to produce material. Foreign aid must be realistically computed in terms of the national interests. And, finally, no military requirement should go beyond the point where the morale and productivity of the people are en-

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dangered. The balancing of resources and requirements is the arbiter in sound economic mobilization.

### **Procurement in Economic Mobilization**

Once requirements for military items have been determined in accordance with sound strategic plans, consolidated with foreign aid and civilian requirements, and brought into balance with overall productive capacity, the next step in economic mobilization is procurement.

In the United States, responsibility for the procurement of virtually all military equipment and supplies has long rested with the armed services. Each service designs and develops its own special weapons and equipment, from the research on which the concept of the new item is based, through the development, testing, and final approval of the item for use. Procurement includes not only purchasing—the letting of contracts for the items required—but also the supervision of the execution of the contract, inspection of the items, packaging and transportation, and the storage and issue by the using service.

Under normal peacetime conditions, with the armed services maintained on a small scale, the problems of procurement are relatively simple. The amounts required are not large, manufacturers are usually eager to obtain military contracts, competitive bidding is keen, materials and manpower are plentiful, and the time factor is not an urgent one. All this is abruptly changed when a war emergency becomes imminent. As the armed services expand from a few hundred thousand men to five, ten, or more millions, total military expenditures multiply in even greater proportion and are measured, not in tens or hundreds of millions of dollars, but in billions. Raw materials, industrial facilities, equipment, and manpower in turn become scarce. Procurement operations expand tre-

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mendously in quantity, yet they encounter increasing difficulties. The time element becomes a critical factor.

### **The Production Phase of Economic Mobilization**

Procurement is not an end in itself, but only a means to an end—a means which in the manner of its handling can either help or hinder the speedy and effective attainment of adequate production.

Production is the axis about which the war economy turns and upon which the scale and effectiveness of the war effort depends. Production includes not only the fabrication of military equipment and supplies and of essential civilian goods of all kinds, but also the provision of essential services such as transportation, communications, and power. It includes provisions of the supplies of basic raw materials on which all industry depends. Production is manufacturing, mining, and agriculture and the innumerable auxiliary and service industries which support them.

War production differs from peacetime production in several important respects. It is, in the first place, all-out, maximum production. It is production with virtually all the slack removed, operating with expanded capacity, longer hours, and multiple shifts.

Second, war production calls not only for greatly expanded capacity, but for capacity converted from the making of the familiar articles of peacetime to the production of the unfamiliar, highly complicated material of war. It demands working to standards of quality and precision much higher than those necessary or desirable in most civilian products.

Third, consideration of financial cost necessarily become of secondary importance in war production. Quality of product and speed of production come first. Actual dollar costs are subordinate to costs computed in terms of time, labor, materials, and equipment.

**RESTRICTED****11**

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Finally, war production is production that is planned, directed, and controlled by national authority to meet national objectives. It is production geared to strategic plans and coordinated by legislatively established policies, administered by scores of Federal agencies. The decisions as to what is made, in what amounts, in what order, for whom, and at what price, are made, in the main, not by individual businessmen and consumers but by the government. The profit motive and the incentive of higher wages or salary incomes are retained, but are subjected to restrictions and limitations.

The direction and coordination of wartime production is exercised by the government through a variety of production controls. The most fundamental of these are the controls over the raw materials upon which all production depends. Under authority granted by Congress, raw materials in critically short supply are distributed among producers in the order of importance of their products in the war production program.

The key questions to be answered in a war production program are: who gets what, how much, and in what order of priority? Supplying the answers to these questions, for hundreds of industries and tens of thousands of companies, is a gigantic undertaking. It becomes the full-time task of many thousands of government employees. They must service vast numbers of requests, which build up into a mountain of paper work. Elaborate systems of priority are devised to facilitate material distribution, employing preference ratings, allocations, and other devices. Direct controls are established over materials in other ways by such means as limitations upon inventories, prohibition of the use of materials for certain purposes, and limitations on the use of scarce materials in certain products.

Controls over raw materials are supplemented by controls

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over machinery and equipment, over end products, and over contributory factors, such as power and fuel. Still other controls are directly concerned with the management of production as in the case of production scheduling which directs the manufacturer in what order, in what amounts, and for what customers specified articles are to be produced.

As labor shortages appear and spread, it becomes essential to devise means to direct this vital element in production to the industries, the regions, and the manufacturers where it is most needed to advance the war programs. Strikes and other impediments to production resulting from unsatisfactory labor-management relations lead sooner or later in wartime to government intervention to an extent that would hardly prove acceptable in peacetime.

Still another type of control over production is that which involves the granting of subsidies, direct or indirect, to certain classes of industry, such as small business concerns, marginal mines, and producers of critical agricultural products.

### **Economic Stabilization**

Direct and indirect controls over production are not enough in themselves to insure the maximized and balanced production of essential goods required for a major war effort. Production, after all, operates within the larger framework of the economic system. The effect of general economic conditions upon production is illustrated in peacetime by the sensitive response of industrial output to market changes, and by the close relations between production levels and general business conditions. One of the most revealing economic differences between peacetime and wartime is the circumstance that while peacetime producers operate most of the time in a buyers' market, the normal condition of

**RESTRICTED**

13



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wartime is that of a sellers' market. From the very nature of wartime requirements, supply cannot keep up with demand, and the continued and often wide gap between the two is a persistent threat to the stability of the economic system as a whole. Under peacetime conditions in a free-enterprise system, the problem of a scarcity is met through the flow of capital, managerial skill, and labor from the areas of less active demand—where profits, wages, and salaries are lower—to areas of more active demand—where the returns are higher. The result is a tendency toward balance, or equilibrium, in the market.

Under wartime conditions, shortages are too general and too great a balance between supply and demand to be attainable. Without government intervention, the natural market forces will produce an upward spiraling of prices ending in an uncontrolled inflation with disturbing repercussions on every phase of the economy. Price control, therefore, is essential for maintaining the economic stability which is necessary to the conduct of orderly business operations, the maintenance of public confidence, and the support of national morale.

In the broadest sense, price control includes not only control of prices of goods, commodities, and services, but of profits, wages, and rent.

Price control is only one of the measures employed to give stability to an economic system running at high speed and subject to extraordinary strains. While consumers' goods are becoming increasingly scarce, owing to restrictions on production, mass purchasing power is rising steadily. This rise takes place in response not only to higher wages but even more to increased employment, longer hours, and overtime pay. Family incomes rise sharply as women and older children join the working force. Personal in-

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comes of professional and salaried groups and from business profits are likewise moving upward and adding to the amount of disposable funds.

This higher consumer income exerts a powerful inflationary pressure on markets as workers seek to spend their money. Taxation measures, rationing of scarce essential goods, and voluntary savings programs are among the more important devices which have been employed by our Government to contain the inflationary influences of higher incomes. In sum, the wide gap between supply and demand, which is a major characteristic of the wartime economy, creates a condition of imbalance which if uncontrolled will have a disturbing and demoralizing influence on every phase of production. The authority of government must supply the stability which the economy itself, under the abnormal conditions of war, cannot provide.

### **The Stake of the Military in Economic Mobilization**

It has been argued that economic mobilization is not, after all, a primary concern of the military profession. This school of thought, while admitting that the new warfare places a tremendous burden on the economy and requires extraordinary measures of mobilization, states that this is not the responsibility of the military, that it is a civilian job for civilians to handle. Further, it is held that the increased scale and complexity of warfare are such as to make it impracticable for the officer to concern himself with the economic side of war.

It is true, of course, that military operations have become more and more complex and demand training and experience of a more and more specialized character. But the argument for specialization breaks down when we reach the higher echelons of command. It breaks down for two basic reasons. In the first place,

**RESTRICTED**

15

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the demands of total war are so great that close and harmonious coordination of the military and economic phases of war are essential. In the second place, by law, by tradition, and by long practice, the armed forces themselves exercise economic functions of great extent and importance.

In war, as in the conduct of any large-scale operation, effective action is dependent upon close-knit, smooth cooperation among all elements. There must be close and harmonious working relations among all the members of any team. In warfare today there are three major members of the national team. These are the military members—the Army, Navy, and Air Force; the production members, including all civilians who contribute economic activity; and the governmental or administrative members. Close and effective coordination of the activities of these three members is necessary. It requires that each one have a certain familiarity and a certain understanding of the missions and duties of the other members of the team and of the conditions, problems, and difficulties which each faces in wartime. While this, of course, applies to all three members of the team, the two civilian members and the one military member; it must relate primarily to the military component of the team.

It is necessary for officers in the higher echelons of command to have some understanding of the character, conditions, and problems of economic mobilization because military strategy must be geared closely to economic strategy; and military requirements must be related closely to productive capacity and to the requirements of the civilian economy. The size and intensity of the national military effort possible depend on how much of a strain the civilian economy can be adjusted to stand, and for how long. For the armed services to ask too little is to prolong the war, add greatly to its cost, and endanger the outcome. On the other hand,

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excessive demands may result in an economic breakdown and the destruction of the will to continue the war. Thus, strategic plans must be balanced against economic feasibility as well as productive feasibility.

This is one major reason for the need of understanding the problems of economic mobilization on the part of the military member of the team. There is a second, a more direct and compelling reason why the armed services should be in close touch with the broad problems and conditions of economic mobilization. In this country, the armed forces have the primary responsibility in one of the most critical phases of economic mobilization, the procurement phase. They design and develop material, and they place contracts for it. Moreover, they supervise and control production under these contracts.

This year the armed services are preparing to spend nearly 60 billion dollars. Such enormous purchasing power concentrated in the hands of a single great agency is economic dynamite in its potential effects upon the working of our economic system. Unless it is handled with care, it can produce very great harm. Mishandled it can disorganize markets, stimulate speculation, create serious shortages, and give rise to inflation. It can demoralize the economy generally. And, ultimately, it can set in operation the forces of political and social disintegration which are the real hope of the enemies of the United States.

This outline of economic mobilization, in terms of its impact upon the economy and its significance in the defensive structure of our Nation, is important primarily in that it indicates two areas in which much must be accomplished in the interests of security. In the first area there must be closed, fuller, and more effective coordination between the armed services and the producing commun-

**RESTRICTED**

17

## **RESTRICTED**

ity of America. This involves a better understanding on the part of the military and civilians alike of their joint duties in the national defense. Each must learn more about the responsibilities, the achievements, and the potential of the other. American industry and the public must learn to think and act for the defensive and economic welfare of our country. The armed forces, in their turn, must devote close study to the problem of employing the tremendous economic strength of America for defense. This should be done in such a way that in both peace and war a maximum of military security can be maintained with a minimum dislocation of the economic processes and opportunities which have made the Nation great.

In the second area there must be a much needed development of the personal responsibility of every officer of the armed services. It is one thing to accept in principle the clear fact that war is, to an increasing extent, an economic activity, and that national survival rests as much upon the ability of the nation to provide ample logistic support to its armed forces as upon the fighting man's devotion and skill. It is something again to be personally prepared and qualified to meet the challenge of this basic military responsibility. The day when the competent officer was a man who understood only strategy, tactics, and the leadership of troops is gone. The officer of today must have these skills—and many others. He must be a technician, a specialist in the infinite variety of material which characterizes modern combat. He must have full knowledge of the problems of distribution. He must understand the complex process by which the industry of the nation provides the weapons of war.

Even this is not enough. Any officer who hopes to attain the highest levels of command must understand the deep economic motives, laws, and relations which determine the operations of a

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free-enterprise community. He must be more than a leader of troops. He must be a leader in every sense. His duties will involve frequent contact with the governmental and business communities. In these dealings, his skills must be the managerial skills which are so well exemplified by the business leaders of modern America. He must learn to recognize problems and to arrive at sound solutions by the application of all the resources at his disposal. Having reached a decision, he must be able to secure decision acceptance, not by authority of rank, but by the powers of logic, persuasion, and personal leadership.

The American society can be led to any achievement—it cannot be driven. Today, the ideal officer must be a combination strategist, tactician, logistician, economist, executive, and statesman. This is a very heavy responsibility. Yet the responsibilities of command must always be heavy. It is the officer's duty to equip himself with the best possible kit of tools to meet the emergencies which he will encounter in the course of his career.

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