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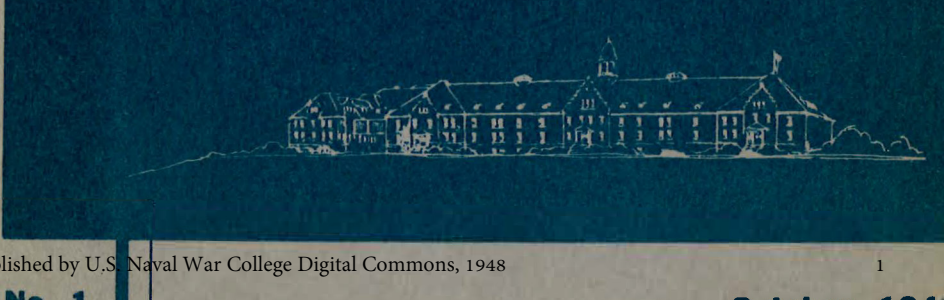

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FOREWORD

This "Information Service" has been initiated and established by the Chief of Naval Personnel for the benefit of officers unable to attend the Naval War College.

In this and subsequent issues will be found selected articles of value to all officers. Many of these articles will be outstanding lectures delivered at the Naval War College and other service institutions.

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LOGISTICAL PLANNING FOR WAR

Vice Admiral Robert B. Carney, USN.

Logistical planning for war is a vast effort involving the Joint Chiefs of Staff, the Security Resources Board, the Munitions Board, the Research and Development Board, the Chief of Naval Operations' Strategic and Logistical Planners, the Bureaus, the Field Commands, and the Army and Air Force counterparts to the Navy agencies I have mentioned. Be of good cheer—I shall make no attempt to give any all-inclusive coverage to the subject. Elsewhere, you will read or hear competent discussions on the various specialized aspects of logistical planning; so, today, I shall content myself with acquainting you with some of the broad problems which constitute a challenge to those who must shape logistical policies in the national military establishment. If I digress from time to time, it will be in the hope that by so doing I may here and there leave a thought worthy of your consideration, as officers interested in acquiring, fostering, and furthering knowledge of logistics.

Last year, as the first class in logistics was getting under way, I expressed the great satisfaction I felt on that occasion. Today, I know an even more profound satisfaction in which there is a good leaven of relief and confidence—relief that so many obstacles have been overcome in launching the Logistics Course, and confidence in the assured preservation of the Navy's hard-earned logistical know-how.

But the launching is only the beginning of the voyage. The lessons of the past, however well learned, will not entirely suffice for the fluid and mercurial times that are upon us and ahead of us. His-

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Vice Admiral Carney is the Deputy Chief of Naval Operations for Logistics. During World War II he served as Admiral Halsey's Chief of Staff.

tory alone might lead to false conclusions, and history's basic principles can easily be confused with history's special lessons. The bony framework of truth will often be difficult to discern through new garments and in the tricky lighting of enthusiasm or prejudice. The magic of the future must be weighed against the proofs of the past, for the new and fantastic of today frequently become tomorrow's commonplace. So there devolves a special burden of imaginative, yet practical, foresight on the planners of today.

"Imaginative, yet practical"—a not-too-common combination, but one which is especially needed in logistical planning. "Practical" encompasses technical competence, and to the qualities of imagination and professional competence must be added a capacity for work, for there is no shortcut to excellence in logistical planning.

All of these necessary attributes can be summed up under the heading of clear, energetic, and articulate thinking.

Clarity of thinking is a priceless commodity in our profession or in any other great and complex enterprise. Its intrinsic value is established both by its rarity and by the dividends it yields to the stockholders. Many years ago, a group of far-sighted naval officers turned to the formal mechanics of logic as a method of insuring the evaluation of all pertinent factors in the solving of our problems. You are all familiar with the results of that project which became second nature to most of us; I refer, of course, to the time-honored order form and method of estimating the situation.

From time to time, we have elaborated on the format, but the basic principles are still immutable and provide the best known structure for building toward sound decision.

However, even with a prefabricated framework availbale to us, there is always the danger of fallibility inherent in ignorance

or disregard of factors which should properly be considered. Our system of military reasoning can be likened to the business machines and electronic computers in that the final answers can be no better than the statistical in-put; the complexities of modern logistics do not alter the principles of reasoning, but they do vastly increase the difficulty of listing all pertinent factors. The Naval War College is now firmly committed to a project which can do much toward instilling a general understanding of the proper approach to this difficult business of logistical planning.

Expanding that thought, we come to another essential strength element in which the Naval War College has a profound and influencing interest: indoctrination.

The great strength of our Navy in earlier days lay in the fact that we had a relatively small, compact, like-thinking officer corps which could be depended on, from top to bottom, to advocate and pursue actions which in the final analysis would support our policies, plans, and programs. Our leadership, our size, and the circumstances of the times all conspired to produce this fortunate result; the situation today in an expanded, heterogeneous, and more complex Navy is such that many serious obstacles have been raised to militate against the re-establishment of that splendid and necessary spiritual and mental cohesion.

In order that I may indelibly impress on you the need for and importance of sound universal indoctrination, let me go back to a day in October, 1944. Admiral Kinkaid and his Seventh Fleet were under General MacArthur's command; the Third Fleet, under Admiral Halsey's tactical command, was a component of Admiral Nimitz' Pacific Ocean Areas Forces; the submarines of the Pacific Fleet were positioned by remote control from Pearl Harbor. The sum total of the American Naval Forces in the Philippine Sea

Area constituted the greatest assembly of Naval might the world has ever seen or may ever see again—far greater than the strength which the Japanese Navy could muster in that area. And yet, mark you, there was no effective single command agency which could weld all of our Naval Forces into a single fleet under a single command; Admiral Nimitz did not have that authority, nor did General MacArthur; and no higher echelon could or would step into the breach. The details of the second battle of the Philippine Sea will keep you, and the student generations to follow you, occupied for decades to come. Obviously, there were many things done which could have been done differently in the light of hindsight; obviously, there were things left undone which could have been undertaken to great advantage. But to me, in retrospect, the vital and important thing is that, although not unified under a single authoritative command, all of those separated commanders were thinking in sufficiently like terms to construct a mosaic of tactical victories fitting together ino a greater mural of strategic victory which effectively terminated Japanese sea power. There were gaps in communications and gaps in mutual understandings among the commanders, but the great principles of sea-power had been inculcated in all of those commanders and were literally second nature to them, so that even without authoritative coordinating command, they instinctively moved in directions which were basically sound. Some critics have said that disaster was narrowly averted — we can not conceed that: the "ifs" of the critics are too improbable if one understands the profound basic indoctrination that actuated Admiral Nimitz, Admiral Halsey, Admiral Kinkaid, Admiral Oldendorf, Admiral Lockwood, and all of those who derived their own tasks and contributed their own parts to the over-all victory. The War College played an important part in that indoctrination—and the War College must continue to exercise leadership in channelling Navy thinking along indoctrinated lines which will meet tomorrow's innovations and complexities.

I have stressed certain mental attributes and emphasized sound indoctrination, because without them the achievement of good logistical planning is impossible.

Your reading will have highlighted the evolution of logistical planning prior to World War II and during the war years, and you are aware of the evolutionary gropings that characterized the period immediately following the beginning of hostilties. I shall therefore waste no time on the past, but will sketch a vignette of the Washington Logistics Workshop as it is today in the year one of unification.

Let me say first, that the title of my discussion today—Logistical Planning for War—is not merely academic; regardless of the strivings of men of good will, powerful national pressures are still being exerted in furtherance of national policies; nations still seek and use coercive devices for imposing their national wills upon others. Even the most hopeful and altruistic person must realize that we are being pressured from without and within, by unpeaceful methods, to bend our will to conform to other views; this pressuring, so far, has not involved shooting or the overt use of force, but we are sitting on a powder keg which could be ignited by a careless spark. The recent Governmental and Congressional Record of Action is prima-facie evidence that the nation recognizes the danger of war and is strengthening its defenses. Therefore, I say that the logistical planning which we are doing today is in every sense logistical planning against the tragic contingency of war, even while it is our earnest hope that diplomacy, firmness, and our latent power may serve as deterrents to another holocaust.

The genesis of our security thinking and the sequence of planning events are, although altered in the detail by unification, essentially the same as in former years: national objectives are

weighed against national capabilities—suitable strategic plans are drawn and their feasibility tested—and the ultimate plan is shaped to conform to our national capabilities.

The formulation of the National Security Act of 1947 was largely predicated on the need to be able to do those things more efficiently at the highest government level, and I firmly believe that the creation of the Security Council and the Security Resources Board, together with the staff agencies of the Secretary of Defense—has provided a mechanism which will enable us to make a far more accurate estimate of our national needs and capabilities than was ever possible before.

But here is an interesting point: unification has *complicated* the job for military planners rather than simplified it. Formerly, each service derived its own statement of its own needs and passed the buck to the Bureau of the Budget and the Congress for decision. Now, however, the military planners are confronted with the necessity for presenting a mutually reconciled recommendation, arrived at within the military establishment; needless to say, strong and enthusiastic proponents of the various arms and weapons are often in disagreement and, therefore, I say again that unification has increased the burden and complexities confronting the military planners.

The recent supplementary appropriations, the passage of draft legislation, and other legislative and executive actions, clearly support the military belief that our defenses need strengthening, and clearly reflect the popular acceptance of that thinking. Consequently, I am violating no confidence when I say that we are building up toward a goal of greater strength: nor am I violating any confidence when I state the obvious truism that we have calculated to the best of our ability the intent and capabilities of those

who may well be inimical to American hopes and ideals.

Having faced the reality that armed conflict is a dangerous possibility in today's surcharged atmosphere, the next question is: How and where shall we fight if conflict is thrust upon us?

Unfortunately, a peaceful nation, without aggressive objectives must wait for the first blow to fall, and can not surely select, in advance, its initial area of conflict and its initial objectives. We are, therefore, forced to a position of watchful waiting, and to the maintaining of forces and the formulation of plans which will care for every reasonable contingency. Possibly, we can eliminate some geographical areas as possibilities for the enemy's early use, but, nevertheless, we must be sufficiently flexible in our thinking and preparations to weather the first unpredictable squall, and enable us to build up toward a winning offensive. We must at least have some agreed-upon concept as to the general scheme of waging war. It should be noted here that radical changes from the broad concept will surely involve radical changes in production schedules which, in turn, take time. And right at this point comes the first impact of logistics on our broad military thinking.

It is a matter of public knowledge, through the medium of the press, that the Joint Chiefs for a long time could not agree upon a general plan of action. Nevertheless, the need for procurement planning and mobilization planning was so urgent that the three departments initially proceeded on a unilateral basis to derive their own missions and tasks and to translate those missions and tasks into a statement of requirements and end products, in order that the Munitions Board might canvass industry as to our ability to meet the military demands. In the Navy Department a strategic plan was evolved together with a statement of necessary forces and desired phasing for reactivation, mobilization, and the initiation of

offensive operations. These requirements were, in turn, translated into procurement items and schedules, and, concurrently, the logistical feasibility of the strategic plans and requirements were subjected to test. Aside from any impact on industry which the requirements of the Army and the Air Force might have, it became apparent that we in the Navy had set our sights too high, and it became necessary to inform the strategic planners of the forces and equipment which could actually be made available on a phased schedule after the outbreak of hostilities. This statement of bold fact automatically places restrictions on Navy strategic planners, and brings home the fact that logistical feasibility is an inescapable control.

Each of the other services must go through the same process —and yet, even when they have done so, the logistical planners still will lack the refinement of directive which they need in order to finally firm up the difficult and detailed business transactions necessary to fulfill the operator's "what, when, and where." The second-run refinements of the three services must again be evaluated by the Munitions Board in terms of industrial capacity, and by the Resources Board in terms of the relative needs of the supporting civilian economy, and of the requirements of our potential allies. If industry can not meet military requirements, even as revised downward, then the Joint Chiefs of Staff must review the strategic requirements and, in the last analysis, it may be even necessary, at the government level to drastically revise our national policies and aims.

Up to this point, I have philosophized, in more or less general terms, on the interlocking difficulties of arriving at a coordinated statement of requirements which will put the three military services in balance, put military demands in balance with

the requirements of civilian economy, and put American requirements in balance with the needs of those who will support us in varying degree throughout the world. Now, I must come down to some of the day-to-day realities if you are to understand the problems of the logistics planner.

It is axiomatic that the elements of our national strength entail far more than weapons and men in uniform; our total strength is made up of the elements of moral strength and courage, spiritual strength, fiscal and economic strength, strength in resources, strength in international ties which may yield support in men and materials. That being so, an inordinate percentage of the national peacetime income spent for military purposes can weaken the greater strength structure. For that reason, the administration has imposed a dollar ceiling on our expenditures even while it recognizes the urgent need to build up our military strength.

So, on the table there is a round sum which must be prorated between the three military services. If each of the services were to acquire the things that it undoubtedly needs to provide perfect security, that available sum would not be enough; obviously, then, someone must make the decision as to how much of the pie goes to each of the services.

And therein lies the nub of the most complex and vexatious problem confronting the national military establishment today.

The Joint Chiefs of Staff must evaluate the programs of each of the departments and must determine those areas of principal emphasis which must be favored and those areas of less importance which can be shaved with the least detriment to national security. If the Joint Chiefs of Staff do not agree—and any understanding person will perceive the strong possibility of such a situation—

someone must make that decision. Let me say, rather, that someone in the military establishment must make a *recommendation;* decision can only be made by the Congress of the United States through its power to appropriate public monies.

These difficulties and problems are not the prime nor sole responsibility of the logistic planner, but he is frequently called into consultation and he waits impatiently for the decision which will permit him to go ahead with final detailed planning.

I should say here that if the Joint Chiefs of Staff fail to agree, such lack of agreement can not be allowed to block the entire process of Government, and it is inevitable that in the case of such disagreement the Secretary of Defense must assume the grave burden of "formulating the national military budget" with all of the strategic implications involved.

One of the greatest bars to effective coordinated planning has been the lack of an inter-service *esperanto* which will permit us to discuss our needs and deficiencies in terms that are mutually understandable. For example, the total Navy effort is broken down into such plans and programs as Fleet Employment, Shore Station Development, Material Improvement, Shipbuilding and Conversion, Aircraft Procurement, Personnel Allocation, Shore Station Operating Plan, Research and Development, etc. The very nature of Army and Air Force operations is such that their approach to program and budgetary planning is on an entirely different basis in many respects, and we find it mutually difficult to identify similar activities within the three services by reason of operational and administrative differences, as well as by reason of different terminology. Obviously, if the Joint Chiefs and the Secretary of Defense are to compare the relative desirabilities of various Army, Navy, and Air Force programs (for the purpose of making bud-

getary cuts), there must be common language and common definitions to enable the arbiter to understand what he is cutting, and what the penalties of such cuts will be. This need is in the process of development, and it will be necessary to give wide distribution to the common vocabulary if we of the different services are to really accomplish a tolerant and mutual understanding of our problems and difficulties.

The logistic planner, concerned as he is with strategic directives, calculating requirements, dealing with technical people, and rubbing elbows with industrial mobilization, must have an extraordinarily broad professional grounding; furthermore, he has great and constant need for the mental attainment and indoctrination which I stressed in my early remarks. In these days of unification, there is now added the necessity for an understanding of the logistical workings of the other departments also.

These new problems which I have cited, arising from the new requirements of unification, afford a valid and logical explanation of what might otherwise appear to be extremely slow progress in the implementing of the National Security Act. It is only human that the Administration and the Legislative Branch at times have become exasperated with the apparent lack of progress; it is also quite understandable that failures to reach early agreements in the military establishment would be subjected to criticism by a public and a press that expected miracles from unification. Nevertheless, the accomplishments of unification are real. For example, they are virtually complete in the field of procurement, despite some ill-advised statements to the contrary.

I could not dismiss the subject of unification without commenting on an oddity which seems to have escaped the attention of

nearly all observers; I refer to the general assumption that with authoritative unification there should automatically follow a complete eradication of argument and disagreement. To expect such a result is to completely ignore the basic philosophy of the Constitution of the United States and the basic tenets of our American principles of government. For example, when it comes to the public's attention that there are differences of opinion within the military establishment, we hear that unification is a "flop" or that so-and-so is insubordinate; and yet an examination of the fundamentals of our form of government immediately indicates that an honest argument before the proper forum is valuable assurance that our democratic processes are still functioning. Suppose that differences of opinion exist, but that under the scheme of unification the Secretary of Defense were empowered to make a decision and to suppress the opinions of the departmental secretaries and service chiefs; when the matter came to a head before the Appropriations Committees, the Congress would thereby be denied the opportunity to hear the conflicting views. Extending that thought a little farther, such a system would prevent Congress from having access to any technical and professional opinion which was not in accordance with the thought of the Secretary of Defense. Obviously, unless the Congress of the United States were to abdicate its rights and responsibilities in the matter of sifting out the facts before granting appropriations, there could never be any unification founded on the right of one individual to make sole decision.

If this aspect of the problem is fully appreciated by the American people, they will make sure that Congress never does so abdicate and will make sure that no arbitrary military authority will ever be in position to hide fact and opinion from the representatives of the people sitting in the Congress.

There has been public criticism also of the fact that the Joint Chiefs of Staff have difficulty agreeing on the roles and missions of the three services. The same thinking with respect to the rights and responsibilities of the Congress applies here as well. The fixing of roles and missions has obvious merit as a means of eliminating certain undesirable overlaps and duplications, but it also has profound inherent possibilities for danger. Conceivably, the designation of one service as the sole agent for employing some weapon or type of attack might well deprive the United States of an opportunity to exert earlier pressure through the use of one of the other services. Such an arbitrary restriction could delay victory or have even more serious consequences. Such a contingency is minimized when the Congress is actually the final denominator of unification through its appropriating power —and we may be thankful that that is so.

New high planning levels in the government structure—unification with its superimposed demands and controls—integration of military and civilian effort—guided missiles, and galloping scientific development—mass destruction weapons—new equipment to meet the challenge of supersonic flight—arctic implications in today's strategy—electronics computers to work out logistics programs—all of these factors now further complicate the business of logistic planning, and they offer a worthy challenge to the best-trained thinkers the Navy, the Military Establishment, and the Country can produce. Logistical planning for war—or even for the peace which may only be preceding war—may well hold the key to our future in the future's deadlier and swifter tempo. It is an all hands maneuver—line and staff—soldier, sailor, and flyer—military and civilian. Every rank will encounter it in some degree.

And I regretfully tell you that from my own observation,

the future holds no promise of relief for you gentlemen—no rest for the weary and no reward of idleness for the venerable. Flag officers must, because of their responsibilities, struggle even harder than their subordinates, if they are to keep *au courant* with the kaleidoscopic changes in the professional pattern. And the specifications for the good logistical planner are growing increasingly exacting with time and with advancing rank.

My contemporaries are making their land-fall on Snug Harbor, and with our passing from the scene, the Navy will undoubtedly go to Hell, as it always does. But if the War College fulfills its high mission of sound indoctrination, the up-and-coming reinforcements will improve on the work of their predecessors—as they always have in a dynamic forward-moving Navy.

And now one last word—as Deputy Chief of Naval Operations for Logistics, I am deeply appreciative of the support which Admiral Spruance gave to the launching of the Logistics Course. But, more than that, I feel an admiration for the man which needs expression. Battle—grave responsibility—prolonged strain—none of these things ever visibly dented the armor of his resolution and integrity; no stress ever changed the quiet warmth and friendliness of his personality. Nothing ever distorted his thinking nor warped his even disposition. The War College and the Navy were fortunate that the last tempered years of his active service were devoted to imparting something of his wisdom to the Navy he has served so splendidly.

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ECONOMIC POTENTIAL of the UNITED STATES FOR WAR

Dr. William Y. Elliott

Gentlemen, the Admiral has said that I have been coming here for some time and that is quite true. This is a very long-suffering place, but I always come here with a sense of relief, particularly as I have come from Washington. It isn't only the climate that is different, but it is the intellectual climate that is quite different.

I am still a Staff Director for the Foreign Affairs Committee down there, and we worked until fairly late last night trying to see if we could stop the deliveries of reparations plants to satellite countries—which is still going on.

There is a danger of losing perspective on these things, I suppose, because there are so many worries in the world that, if you allow yourself, you can just worry yourself into the grave any time.

I used to lunch every week with General Clay, in the Production Executive Committee of the War Production Board, and I have high regard for him. What we have unwillingly, and perhaps unwittingly, assumed is a sort of an imperial position in the world. The experience of listening to General Clay talk about his problems as directly and simply as a good soldier should, with great conviction, was very interesting and very disturbing.

The question that I want to talk about this morning has some bearing on it. I'm going to try to develop in these two lectures the topic the Admiral has assigned to me—something of the economic potential of this country for war, emphasizing not only it's

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deficiencies and the remedial steps that might be taken about them, and not only the strategic materials on which I have lectured here for many years, but the facilities, the bottleneck in facilities, the bottleneck in the accessibility of stuff. I also want to talk in some measure this morning about what seems to me to be an even bigger unknown in the equation than any of the others; it comes down to this—we have to know the kind of war we are going to fight next time.

In this and the next lecture I thought I would try to set out the problem in terms that will encompass a little bit of what General Clay, the whole Marshall Plan, and all our economic steps to buttress Western Europe and China and to shore up the British Empire imply. These factors have a direct bearing on the kind of war we intend to fight, and, presumably, how we intend to fight it and hope to come out of it. Everybody, of course, keeps hoping that this isn't necessary, and won't be. I hope so too, but I wouldn't make any plans on it. An unknown in that equation of very great importance is the political attitude of this country and its willingness and ability to support an all-out war against an enemy who understands, far better than anything we have been up against, the use of cold war, fifth column, sabotage, and propaganda.

We are confronting in this national election an important party in the field which is completely under the control of Moscow. It is a most disturbing phenomenon. The arraignment (however dubious the evidence, though certainly with some plausibility) of a large number of people in positions of high trust, with the known record of some of them as Communists, taking orders from Moscow, is not an encouraging factor to public morale. It's impact, as so many of these things may be, is not simply to anger people and make them want to clean up, but to disturb them profoundly and perhaps to make them lash out in the wrong direction, and to make stupid mistakes of tactics in dealing with this kind of proposal. The result

may be to force people into the Communist camp who are not yet in that camp; to allow the Communists to exploit situations that are certainly not exploitable if we handle them right. It ought to work the other way. All these things tend, I think, to set the problem of our war in terms that Naval, Military, and people of every walk of life must be thinking about.

Probably the most profound weapon that the Russians have at this time, is the reiterated story that is very well spread in academic circles, "We can't win the war against Russia no matter whether we win it tactically or not." It is being very sedulously cultivated that the destruction of civilization will be complete, the ruin of this country or of Britain, after the war. I think that is a very important matter. It is insidious. It goes down much below the level of all sorts of things. About certain kinds of war that would be quite true, and we may fight that kind of war and we may be lucky to emerge without direct enslavement. But if we do, it will prove that we are not fit for anything different, because we don't *have* to fight that kind of war.

If this democracy is capable of strong leadership it won't turn into a Caesarism. If it isn't it will, because we are going to have one or the other kind of strong leadership sooner or later to deal with the kind of world we are living in. We are up against a very tough breed of people and the explosive character of the situation may be demonstrated by just this simple observation. No matter whether or not the Russians intend to strike in the fall after the crop season, it nevertheless is a fact, that the inner tensions in the struggle for power in Russia; the discrediting of Zhdanov by his mishandling of the Yugoslav business; the setbacks that have occurred to Russia in the Finnish elections and the tough attitude the Finns have so far maintained at the risk of their whole national future and the life of their government—these are very serious factors that might tip off the kind of thing that any

dictatorship in a totalitarian system with inner-divisions and pressures might do to save itself.

That is the eternal risk we run. As you know we have seriously exposed ourselves by our mistakes in the peace settlement During the war I tried to point out the danger of our trustfullness and complete naivete and was treated almost as a traitor for my pains. Well, that is all down the drain; we start with that kind of deal as we always do.

The situation from the point of view of our own efforts is not discouraging, providing war is not always discouraging on any basis. By this I mean that a crippled Russia with a different government would not be a threat to the world. I would engage to say that the world would come back to a livable world rather quickly if that threat didn't hang over it. When these boys say, "Well we can't win," just ask them the simple question, "If Russia were friendly, or were nonexistent as a great world power, what would the world look like today? Would you be having the worries you have?" I don't think so. There is nobody else who would put enough schnorkel submarines into your path to make your life miserable for some time to come. There is nobody else in the atomic race as far as we know with prospects of really turning it loose. There is nobody else quite able or willing to undertake the risk of a showdown struggle. There is no one else whose philosophy basically demands the destruction of any power system outside itself.

"Oh," they say, "this Franco of Spain is a terrible fellow." He is small potatoes. He would be out of the picture tomorrow if he were any problem, but he isn't any problem. He is a bad boy; he is a very unpleasant party; but I don't lose any sleep over him and I don't think anybody else does either.

China fifty years from now may be a quite different picture and one hundred years from now, still different. There are those

who think that China, India, and the yellow man and the brown man will take over the world. Again I'm not going to lose any sleep over that. I see no immediate prospect of anything but anarchy and very dubious prospects of any kind of real integration in those races at this time. Maybe they'll develop a Genghis Khan, but the Genghis Khan that I'm looking at wears a different kind of hat and is very obvious on the horizon today.

So you have to ask yourself that simple question, "If you could neutralize Russia what would the world be like?" The British would stagger on to something approaching a recovery without any question at all. Great as their burden is and great as their losses have been, they have recuperative powers and are not through in spite of everything that has been said to the contrary. The French, living in a state of perpetual fear, might get over the nightmare of Germany with a Germany such as they would then face—divided, perhaps split up for purposes of federation in a larger European unit.

I'm pointing this out to show you that our picking up the pieces of the world constitutes the framework of our problem in economic potentials in two ways—what do we get out of these areas and what do we have to put into them? During the last war we had to put in more than we took, but we took very important elements without which it would have been a much more difficult job.

At times people have said, "If you want to lose a war just get Italy on your side." That is brutal and a little untrue. You can hold Italy as an anchor in the Mediterranean but it certainly has been true in the past that Italy has been a somewhat dubious military asset. It was a country with no surpluses; it demanded support. In the early days of 1920, Lenin is supposed to have decried the Communists who were trying to get him to exert his maximum efforts in Italy. He said, "Who would give them their coal? Who

would feed them? Not we." And without food or coal Italy isn't a going concern. She hasn't enough raw materials to keep the population alive.

So you do have liabilities as well as assets in your allies, but the power that the Marshall Plan attempted to mobilize and is promising to mobilize, comprises as you know, something in the neighborhood of over 260 million people in Western Europe—over 260 million people with a high degree of culture more like our own than any other in the world, except the British Dominions. If you want to pass up the balance sheet in minerals, they have the natural resources of the world to a far greater degree than we do. It is a simple point but one that has counted since the history of civilization. They've got them today. We *used to have* more than we have today.

There are some drastic and interesting changes that occur as you exhaust the cream of your natural resources, the tremendous natural advantages with which nature has endowed you; the things that give you easy superiority in world production. For example, the oil resources of this country would give anybody concern, particularly if he watched the alarming geometrical progression of oil consumption. If we had a dictator in this country, he would say, "There will be no further use of oil for anything except mobile power". There would be no more nice oil furnaces such as I now have. How much oil there is in this country nobody knows, and it is a pretty sensitive question. The easy oil is going rapidly. As you grow to a dependence on imported oil, as we soon will (if we haven't already) the picture is of dreadful significance to a Navy and an Air Force. You are having your procurement difficulties. The 100 Octane program runs afoul of a lot of things. It means clamping down on a civilian economy in a way that is going to be very difficult. I'd hate to try rationing control. It is tough business to make people live up to, and beyond a cerain point it does not pay dividends. I am trying to suggest to you that the amount of the world

you control, the degree of control that you exercise, the efficiency with which you can count on production and delivery all have a bearing.

That of course, may run into a rather simple delusion that all you have to do is buy up all the excess stocks of the world. Note "excess"; that's an interesting word. But that is what it amounts to because when you start competing in an open market you have to put the controls on to cut down the use of things. You have to keep ahead of normal commercial demands. You must avoid interfering with the market. You can't go into the market and break the price of copper by stockpiling it, if that is going to add two cents a pound to the price of copper. So you don't buy it. You can't develop marginal supplies as yet.

The E.C.A. law gives us a handle to insist on the development of strategic materials all over the world. The falling off of metallurgical chrome, the lack of an adequate railway line, labor troubles, and difficulties of that sort can force us back into a dependency on Russian chrome which we are actually importing in very large amounts at this time. We don't need it, we didn't use a ton of it to the best of my knowledge during the war. The British used some but they didn't need it, and could have done without it. As long as we had New Caledonia, we had metallurgical (not chemical) chrome. And there is chrome scattered around the rest of the world that ought to be used. The Philippines have some chrome of a metallurgical grade which we aren't doing much about.

But everyone of the countries that we are assisting at the expense of our own natural resources is supposed to let in our private trade. However, the British have just said they will have none of it. The Secretary of the Colonies has made a fighting speech about doing it the socialist way without any private capital, either British or American. Well, it isn't going to be developed that way. His scheme for developing what are called ground nuts in England (we call them peanuts) has turned out to be just peanuts.

The British never come out second best in any conference. They always do very well whenever we get around a table and they will continue to do so. I hope we will develop the people who will at least deal with them on equal terms; that is all I ever wanted. There is nothing unfriendly in this attitude. I fought with them in the first World War, but I do like to keep my eyes open whenever I am in a trading position. Right now they are, as usual, out-trading us on this E.C.A. business.

From the point of view of the Empire's future, this development is of very great importance, and that phrase in the E.C.A. legislation relating to equal access, national treatment, and not most favored nation treatment, is of some interest and is only fair. If you are going to pour out everything one way you should get something back the other way. The British may scream, "It just isn't done; it's extremely bad form", and all that kind of thing.

Just recently they found that another little tag in the bilateral agreements was greatly disconcerting to them and the last issue of "London Economist" which reached me made a mild protest at the time. The British were just taking off the export duty on tin, 10 pounds a ton, to prevent smelting of tin outside the empire. This is a very reasonable attitude from their point of view but quite an unreasonable one from ours, particularly since the Malay States would not now be British States if certain things had not happened in the Pacific with which we were not unconnected. But as a codicil to that little deal they put in the phrase that we would have to scrap our tin smelter in Texas unless it is run along unsubsidized lines. Now a proposal like that and an acceptance of that proposal by this country reaches the height of influence in international relations.

Everything in England is subsidized by this country—everything! If you make up the trade-balances of people, including their representatives in Embassies, you will find they pay their

people three times what we do. I would like to call to their attention another clause in the E.C.A. act which says no country receiving aid shall make any hindrance to the stockpiling of strategic materials by the United States. The "London Economist" regretfully concludes that this phrase in the act (and its acceptance in the bilateral conventions) has probably assured the retention of the tin smelter in Texas without question as to its commercial success or not. Well, that is just a little matter and I portray a little unnecessary irritation perhaps.

Just now we are in need of manganese and cobalt from Russia (to an appalling and unnecessary degree). That has been used as an argument that we must continue to ship Russia anything the Russians very much want. How *that* is the conclusion I don't know. *My* conclusion is that we had better get manganese, cobalt and chrome from somewhere else, because we are not going to get chrome and manganese from Russia, if it is not to Russia's advantage. Many circumstances show that dependence on such a source for manganese and chrome would be absolutely fatal. So I urge that you think of our system as part of the world system in which some elements can be counted on with greater certainty than others.

What becomes a serious matter is whether or not there are deficiencies that will cripple us. There are some that are very dangerous—mica, quartz crystals, industrial diamonds, and things of that sort. These are essential to our economy and must be imported. Not only are these materials scarce, but the losses in transit may be much greater than anybody would like to contemplate. If we can control the seas in the next war we may be able to maintain an adequate supply of these items.

During the last war a slow ship put into Madagascar and was loaded with a six months' supply of graphite and an eight months' supply of that special mica that you insisted on for the spark plugs of your flying boats in the Navy. Why you did, I didn't

understand, but you had a story and stuck to it, that when planes hit the water with hot engines, other plugs wouldn't do because they cracked. So you had to have that special mica, and it had to come from Madagascar. We planned to trans-ship the mica to faster ships and spread it among several ships on account of the heavy rate of submarine sinkings. But the shortage of ships prevented that, and we had to start her out. I won't tell you of my fears for her safety and how the loss of an eight months' national supply of mica would have affected your plugs, but as luck would have it, the ship finally showed up safely in port.

We flew in bauxite at one time to keep ahead of the production schedule by four days. It was as close as that. And there are some other things that you don't like to think back over. No one likes to operate that way, and stockpiles are the logical way to stop it. But unless people are prepared to cut down their consumption we must develop new resources that are earmarked for stockpiles. That is what we are trying to do but in a commercial field with the inflated prices of everything, people just don't do it. Jesse Jones wouldn't buy rubber for quite a long time unless he could get it shading the market price by one-tenth of a cent. It took Will Clayton quite a long time to get used to the idea, but I will say this, that after he did get converted, he spent money like a drunken sailor.

Now I have a hearty appreciation that deficiency in stockpiling is less important perhaps than deficiency in some things that people are not thinking about at all. The electric power situation domestically may be a limiting factor in most of the important things that we have and domestic consumption of electric power is most difficult to cut down. You can take off the peak load, but it is a tough proposition and it isn't where you want it all the time. If the TVA had not been in existence, if the big development in Washington State had not been in existence, we would not have had the pow-

er required for our atomic plants. The new generator for the TVA was knocked out after the boys cut the taxes. No doubt they found the budget wasn't going to balance when they had a lot of new demands on them—the E. C. A., aid to China, Greece, Turkey and all that. To increase the electric generator capacity of this country may be an exceedingly serious business. We have just stretched by in meeting the load of demand for the civilian economy, that is, an industrial economy which is primarily the bigger user. It isn't located so that you can turn it on and off to civilians in an easy way, and anyhow you can't do it beyond a certain amount. It is a tough proposition, and it would be much better to have an extra load factor.

The facilities we built up during the war were scrambled and disposed of after the war in a very unhappy way. You would have thought we never had any prospects of doing anything with those facilities again. We stopped that recently but it was pretty late, and a great deal went down the drain.

In the necessary balancing up now, everybody has said that the Army and Navy were caught in 1941 with whatever estimates were already made as to the size of the war, and that the defense effort at the outset was very nearly ruined by the extraordinarily low estimates that were put in by the services for their needs.

Well, let's consider that. The fault of the American Services is that they are too well disciplined in their assumption that they take power from somebody else. You have to *form* power in a tremendous number of cases. You have to *run* the economy more and more as time goes on. You are already in it up to your necks in most important areas of scientific research, and in procurement which plays a tremendous role. In the planning of any sort of system, it is not going to jump out in full bloom. Somebody has got to sweat and travail like industrial powers are doing, like your people are

doing, and you must have people who understand enough about it not to ruin it.

So I am appealing to you that you will have to plan on a basis that you didn't think you had to in 1940. You were being very good, very disciplined; we didn't think that we would have to carry one-half the world on our backs. They said, "Get the United States ready for a war", and at that time the whole talk was of just defending ourselves. I will never forget old General Hasting when that happened to him. He had to have two or three drinks before he could steady himself. Imagine having $10,000,000,000 thrown at him just like that and told to get rid of it—to do something about it. Well, it was a unique experience. And it was an almost shattering one. You can understand how a man who had been living from hand-to-mouth with an Army budget for years and years, suddenly became a little disconcerted with this.

And it wasn't to be wondered that under those circumstances the planning of the services should have been inadequate. Lend-Lease wasn't in the cards at that time and the thought was that the British Purchasing Mission and the French Purchasing Mission would keep the aircraft industry going when nobody else could. Every estimate I made (and I don't mind saying this because they were thought by others to be so excessive and outrageous in that first summer) turned out to be shockingly inadequate. I would have been court-martialled if I had been in uniform for the modesty of my proposals though they were generally 50 to 100 per cent above those of anybody else. But I couldn't take upon myself more than that.

I am trying to say that if we fight another war at all it is going to be a still bigger war, and must be, for that is the only way it can be fought. The maximum efforts of our system under all our controls will be needed if we have to fight again.

Note: This is the first of a series of two lectures by Dr. Elliott. He has not edited these remarks, and should not be identified with his statements.