INTRODUCTION TO REQUIREMENTS

10 November 1954

CONTENTS

Page

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INDUSTRIAL COLLEGE OF THE ARMED FORCES

Washington, D. C.

INTRODUCTION TO REQUIREMENTS

10 November 1954

COLONEL GOLDSMITH: Having already received the Curriculum Books for Unit IV, plus a couple of Monographs related to the Unit, --R-178 on Requirements, and R-173 on Supply Distribution-- you know that today marks the kick-off of your course of study in "Requirements and Logistic Systems." If you read the scope for this presentation, appended to the weekly schedule you noted that my talk is labeled as an "Introduction" to the Unit. So accordingly, it isn't my intention to get deeply into the subject matter to be covered during the course, but rather to establish a setting, and give you a preview of the field you will be exploring for the next six weeks. Insofar as possible too, I will steer away from the material which is covered in the monographs distributed to you, as I have high hopes you will read them during the next few days.

In the College Catalog, which each of you has seen, there appears the Mission for Unit IV. Most of you have probably read it, but if not, you doubtless have read in the introductory section of your Curriculum book, the Mission of the Branch stated in slightly different language.

I think the majority of you were probably at least somewhat impressed by the diversity and breadth of coverage.

As I think back to a period several months ago, when the College calendar and course content were being drawn up for this current class, I can't help but be a little bit amused. The Mission for this Unit was finalized at that time. After several drafts and revisions by the Faculty Board, it was finally approved. Of the individuals who composed the Faculty Board then in session, five have now retired and three have been transferred.

Seriously though, the scope is not quite as formidable as it would at first appear. The course of study as mapped out for the next six weeks, is based directly on that Mission. While certain aspects have been emphasized, nothing has been omitted.

Everything within this mission falls within four broad, general categories.

(1) Development of material requirements to support strategic plans and international commitments of the United States.

(2) Balancing of total requirements with national resources.

(3) Logistic systems of the United States and certain other nations in support of operations, including combined operations.

(4) Transportation and communications systems and the problems involved in their mobilization.

During this period I will try to show you how the study during this Unit, relates to and dovetails logically with other segments of your full year's course; the significance and relationship of logistic planning and operations to the overall problem of economic mobilization; and then to point up some of the major influences affecting this field of study.

It was pointed out to you in an early lecture by Dr. Reichley, that the first part of your course would be devoted primarily to a study of the resource position of the United States. During the two units just completed, you had a pretty comprehensive look at our position with respect to manpower on the one hand, and natural resources on the other.

The title of Unit IV--"Requirements and Logistic System"--should suggest that our studies now are going to be primarily concerned with the broad field of "Logistics."

If you were to compare the definition of the word "Logistics" appearing in Webster's Dictionary, with that cited in the "JCS Dictionary of Military Terms," you would note only a slight similarity. For that reason I think it desirable that we come to a reasonably common understanding of what is implied when we use the word.

For our purposes we will obviously accept the definition appearing in the latter reference, but I'm not going to quote it. Instead, I have prepared a chart which I think depicts the meaning quite accurately. For a very full and complete definition--in several thousand well chosen words--I refer you to Item 2 in the Bibliography of your Curriculum. The title of that entry is "Logistics--What Is It?" For the time being, let's settle for my chart. (See chart, page 4.)

If there are any purists in the audience, they could rightly argue that some of the ramifications of logistics included in the definitions, are not shown. But I think this "Logistic Chain" will serve our purposes very well.

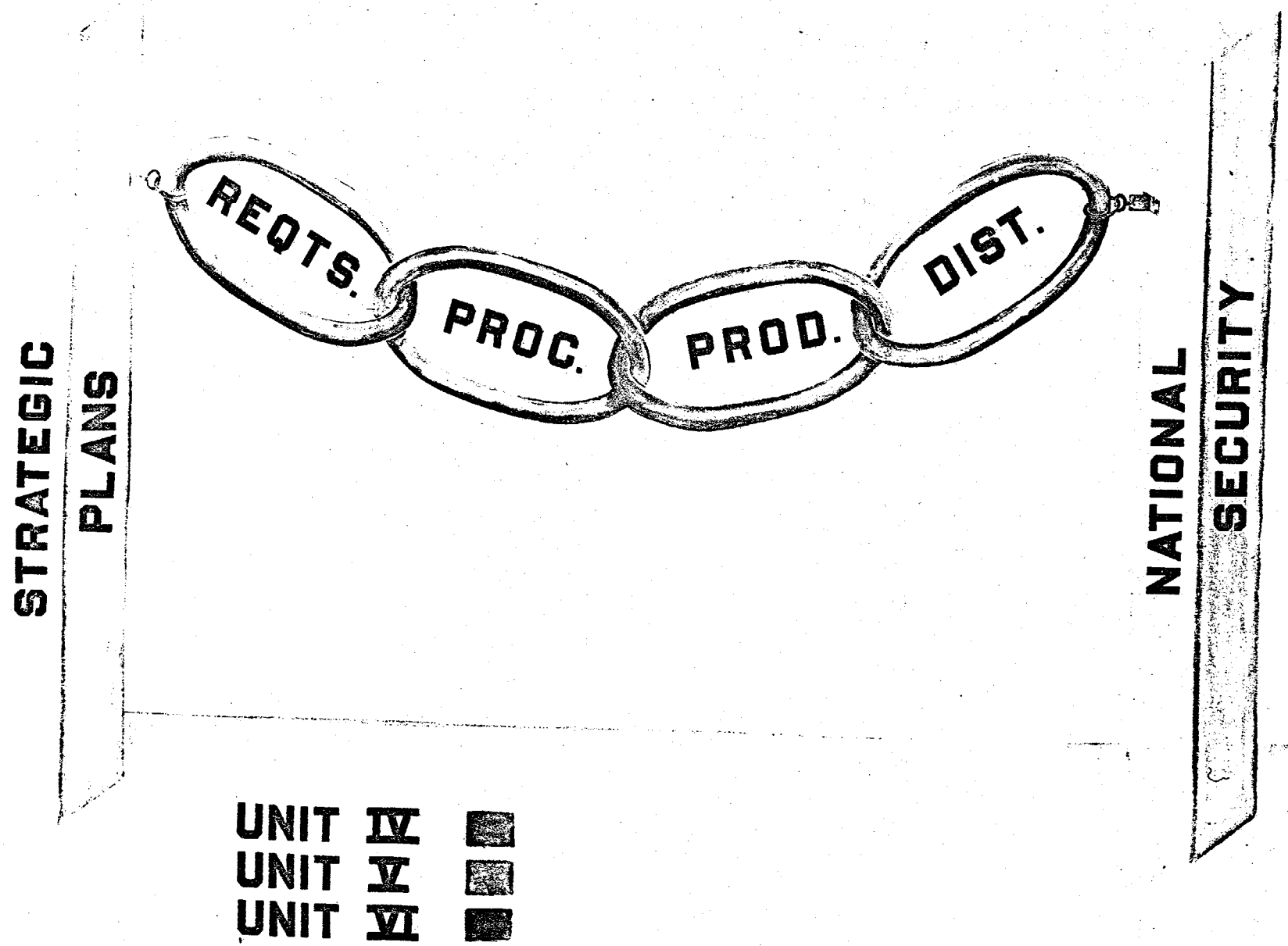
It shows a chain of four links, each of which is a step in the process of logistic planning and logistic operations.

The initial link is Requirements. This is followed in turn by Procurement, Production, and finally Distribution. I've suspended this chain between two pillars I've chosen to call Strategic Plans and National Security. Logistic Planning stems directly from Strategic Plans. But, however sound our Strategic Plans are--and we assume they are sound--they will fall short of insuring National Security, unless our logistic system is capable of providing adequate and timely support.

As you've noted, I've shown these links in three different colors, not to designate any relative importance, but rather to relate each of them to your course of study here at the College. The two links in red are those we are going to be devoting our time to during the current Unit. Starting in after the holidays, you will take up Production in Unit V, and Procurement in Unit VI.

I haven't joined these several facets of logistics together in a chain for dramatic appeal, but rather because they are in fact links in logistic planning and operations. It is well nigh impossible to isolate any one for consideration of any kind, without finding yourself tied to the others. So, while our emphasis during Unit IV is on the red links on the chart, your study will touch base with the others.

THE LOGISTIC CHAIN



For the next few minutes I'm going to talk in somewhat more detail concerning these two links I've called Requirements and Distribution. So, first--Requirements:

Once again I'm going to resort to the JCS Dictionary. There we find "Requirements" defined as:

> "...the need or demand for personnel, equipment and supplies, resources, facilities or services, by specific quantities, for specific periods of time or at specified times."

In other words--what do we want--in what quantities-- and what is the schedule of deliveries?

The term "Requirements" has been bandied around so much, used and misused with so many different connotations, that I think it most important to keep in mind this quite simple definition I've quoted.

You noted that the JCS definition includes the word "personnel." I want to make it clear right here that during this Unit of the course we will be concerned primarily with Material Requirements. You have already during your Unit II, been in the business of requirements insofar as manpower is concerned. There you had a thorough look at the breakdown of the U. S. population into its major categories, and how people will be best employed in an all-out effort. The point was also brought home that in the final analysis, manpower is probably our most critical resource.

In our Unit we will be concerned only with bulk requirements for manpower for the uniformed services. As you will find out, it is the demand for personnel, in terms of major combatant units, that becomes the basis for our tremendous requirement for materials in every form.

In one of our College texts (R184), you find the statement (It's Louis Hunter speaking, though the text doesn't bear his name) that "Since the purpose of economic mobilization is to provide the supply or logistical base for military operations, any program of

[illegible] for minutes I'm going to talk in somewhat more detail concerning these two kinds of "requirements" and "information". So, first--Requirements.

I use again the phrase to refer to the 30% in the survey. There are the "requirements" defined as:

"... the need or demand for personnel, equipment and supplies, resources, facilities or services, by quantity, quantities, for specified periods of time or at specified times."

Problem statement--what is we need--in what quantities--and what is the schedule of delivery?

The term "requirements" has been bandied around so much, and used interchangeably with so many different connotations, that I think it is most important to keep in mind this quite simple definition I've quoted.

You noted that the 30% definition includes the word "personnel". I want to make it clear right here that during this part of the course we will be concerned primarily with military requirements. You have already during your first 10 days in the business of requirements matter as managers in monetary. There you saw a thorough look at the procedures in the [illegible] system and the major categories, and some people will be next employed in an all-out effort. The point was also brought home that in the final analysis, manpower is probably our most critical resource.

In our that we will be concerned with such requirements for manpower for the uniformed services. As you will find out, it is the demand for personnel, in terms of major categories, which forms the basis for our [illegible] requirement for material in every form.

In one of our college texts (Kelly), you find the statement (it's a little further speaking, though the text doesn't bear his name) that since the purpose of economic mobilization is to provide the supply or logistical base for military operations, any program of

economic mobilization takes its departure from the strategic plan." And further, that "The strategic plan provides the basis for taking the first step in economic mobilization, namely, determining requirements." Stated otherwise--strategic plans are the genesis of military requirements.

While our emphasis during this Unit will be on the problems and headaches of planning military requirements, we are going much further than that. Why? Because in a fully mobilized economy the military "take" may be quite appreciably affected by the total claims against the Nation's available resources.

We can bulk these total demands into three major categories:

(1) Military--including aid to our allies.

(2) Defense Supporting.

(3) Essential Civilian.

You can't produce military hardware without a tremendous back-up of facilities, supplies and services. In other words, it takes steel to make steel, and it takes petroleum to make and transport petroleum, and so on. And all of our 160 million plus population has to be fed, clothed, and housed.

What does it all add up to? Just this. In any future all-out mobilization there is every indication that the sum total of what all the claimants would like to get, will far exceed supply. This inevitably means some system of rationing and allocation of available resources. Therefore, in our consideration of requirements during this Unit, you will see that we can't fully come to grips with the problems of Military Requirements, without considering the total demands against the available resources of the economy.

The reality of having to face this problem squarely didn't get much more than passing attention until about three years ago. The Korean war actually forced the issue. I think I can safely say that the shortages during operations there, however, were not because somebody said "No you can't have it," but rather because of the inevitable element of Lead Time in our planning.

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But you will recall that when the Chinese crossed over the Yalu River, we started to plan on the basis that M-Day might be awfully close at hand. So what did we do? We submitted a set of M-Day requirements that in some instances exceeded by several times the total availability of our resources. If I may use a pet expression of General Bruce Clarke, who was my boss before I came here to the College, the Office of Defense Mobilization took a very "dim view" of this entire situation.

Well, the net result of it was a "new look," if you will, at the whole concept of military requirements planning for full mobilization. I'm not going into detail concerning it, nor is it necessary as you will hear and study more about it.

But, in a nutshell, it boils down to this. In the first year of a war the total Gross National Product of the United States is going to be, say, "X" billion dollars. It has to be split amongst the major claimants, of which of course the military gets a large cut. So ODM (after a thorough analysis of all the factors involved) cuts this "GNP Pie" and informs the Secretary of Defense, that for the first year of a war "Y" billion dollars is your share, and, therefore, your requirements must be planned within this ceiling. Under this concept, however, the percentage of the GNP available to the military will rise considerably during the second and subsequent years of war.

This scheme of planning was referred to originally as the "Mobilization Production Planning Program." The ODM a few months ago prepared a pamphlet describing this concept under the title of the "Mobilization Readiness Program."

When Mr. Flemming lectured last week you will recall that he made mention of having recently received from the Defense Department their requirements for an approximate one thousand items, which represented about 80 percent of the dollars to be spent. These requirements were prepared in implementation of the planning program I've just explained.

I'm not proposing that this concept is entirely sound, or inferring that the Department of Defense has "bought" it. They have not. The fact is, however, that ODM and the Defense Department are beginning to better appreciate each other's problems in this most important area.

Before leaving the subject of Requirements, I want to bring out for you the relationship between current requirements planning and mobilization requirements planning. This is a source of mental confusion to the uninitiated.

I think it is obvious to you from what I've said already, that for mobilization planning purposes, we have to determine the full requirements we expect to need to prosecute an all-out war. This is the basis for planning the Mobilization Base that Mr. Flemming told you about.

At the same time, the planners are busy coming up with a tabulation of current requirements to support going operations.

Now, wherein do these two sets of requirements touch base with each other? To explain this I'm going to have to outline in part the scheme of the JCS Program for Planning. Under this concept, three related strategic plans are constantly in effect.

The first is the Joint Strategic Capabilities Plan (formerly known as the Emergency War Plan). This is the one under which we fight with the forces in being, come a war at any time.

The second is the "Joint Strategic Objectives Plan" which has an assumed D-Day, always three years in the future.

Then there is the "Joint Long-Range Strategic Estimate" which considers a period starting five years hence. This is not a plan in the literal sense, but rather long-range guidance for research and development planning.

Now let's drop back to the Joint Strategic Objectives Plan (referred to as the JSOP) as this is the plan we're most directly concerned with in requirements determination. This plan in effect prescribes goals (force levels, etc.) which are considered attainable by the D-Day assumed in the plan. And remember, I said this is three years in the future.

Viewing this plan in one way, we might say that it represents a position of readiness we wish we had today, but which we won't be able to attain for another three years.

Before leaving the subject of requirements, I want to bring out for you the relationship between current requirements planning and modification requirements planning. This is a source of recurrent confusion to the uninitiated.

I think it is obvious to you from what I've said already, that for modification planning purposes, we have to anticipate the full requirements. We almost to need to procrastinate on different work in the hope of planning the modifications in three years. Planning has to be done.

In the same vein, the planners are busy coming up with a tabulation of current requirements in support policy questions.

Now, there are three two sets of requirements which have [illegible] exist. I only point this fact out here in order to outline in part the process in the JCS Program for Planning. Under this situation, we have created strategic plans more constantly in effect.

The first is the Joint Strategic Capabilities Plan (formerly known as the Emergency War Plan). This is the one under which we fight with the forces in being, now or any time.

The second is the Joint Strategic Objectives Plan which we [illegible] today, always three years in the future.

Then there is the Joint Long-Range Strategic Estimate which [illegible] a period starting five years hence. This is not a plan in the literal sense, but rather long-range guidance for research and development planning.

Now let's drop back to the Joint Strategic Objectives Plan (referred to as the JSOP) as this is the plan we're most concerned with in requirements determination. This plan is called [illegible] (force structure, etc.) which are constituted [illegible] by the Services assumed in the plan. And remember, I said this is three years in the future.

Viewing this plan in one way, we might say that it represents a prediction of conditions we wish we had today, but which we won't be able to obtain for another three years.

The JSOP provides guidance for the planners in a number of respects, but I will mention just three--as they bear directly on this discussion:

(1) Provides guidance for mobilization planning.

(2) Provides guidance for preparation of that portion of the annual budget for support of forces and resources for peacetime employment.

(3) Provides guidance for preparation of that portion of the annual budget for support of additional forces and resources needed prior to the D-Day assumed in the plan.

Without spelling out the details, there is included in this latter category, provision for mobilization reserve stocks. (This is known as the Mobilization Reserve Materiel Requirement--MRMR for short). The size of the MRMR as reflected in each annual budget, represents some portion of that required to attain the full posture provided for in the JSOP.

So we compute requirements for basically two purposes:

(1) For full mobilization planning.

(2) For things to be procured--to either support current operations--or to build up the MRMR.

I'm going to by-pass now those next two great big links in our chain--Procurement and Production--and discuss for a few minutes the subject of distribution. We will study and talk about it here at the College in its very broadest sense. What do we imply within the meaning of this term?

We will consider it here, as that phase of logistics which picks up at the point where military supplies are received from industry or suppliers, and which continues through final disposition, reclamation and salvage. It includes storage, movement, distribution, (in the literal sense) and maintenance. It includes the operation of all the facilities and means for accomplishing these steps. This takes

in the transportation and communications systems. Most important of all perhaps, is the management organization which ties all this together, and makes it possible to operate this system in such a way as to render timely, efficient, and economical support to combat forces.

This military supply system is truly a vast operation. The size and scope of it far outshadow anything in American industry. To give you some idea--there are in the system on the order of 3.5 million different types of items. The military inventory of supplies and equipment, at the present time, is in the neighborhood of 100 billion dollars. As a comparison, the value of the inventories of all manufacturers in the United States is only about 42 billion dollars.

Little wonder that Congress has seen fit to have a look at how we manage our supply operations. To mention a few evidences of it which probably strike a familiar chord with you:

The Bonner Committee reports on "Federal Supply Management."

The Hebert Committee's "Chamber of Horrors" hearings.

The Smith Committee reports on "Korean Ammunition Shortages."

And, most recently, the Riehlman Committee study of "Government in Business."

I guess it's almost axiomatic to say that everyone thinks he can run someone else's business better than he can do it himself. However, we still have much to learn, and in the final analysis, this congressional interest is probably a good thing.

In your studies during this Unit, you will have an opportunity to find out how the military supply and distribution systems are organized, and how they are managed and operated. You will learn of some of the management techniques and controls, which are indispensible to efficient operation.

While there is much we can adopt from sound civilian business practices, and apply it to our own operations, it must be kept in mind,

however, that our primary objective is the timely support of combat forces. That poses the question as to whether we can afford to have a system that is most efficient and economical for peacetime support, but which might fail to meet the demands of all-out war. This is a point on which you will need to weigh the pros and cons in your deliberations.

I can assure you that this business of military supply and distribution is big and complex. And the Department of Defense will welcome any constructive studies you may come up with.

Earlier in this talk I said that I would highlight some of those major influences which affect this whole field of study you're now entering. There are many, but I will confine my comments to just three.

(1) Research and Development.

(2) Lead Time.

(3) The Budget.

Already during the two units just completed, you have gone into many of the aspects of research and development as they have applied to your studies in manpower and in natural resources. You will hear considerable about it during the current unit, and you will really get into it during your studies in procurement and production.

This commodity, which we call "technology" and which is really a product of research and development, is truly a third national resource of great importance. It enters significantly into all of our economic mobilization planning. Our particular interest in it during this unit centers around the effect which it has on logistic planning.

The effects of research and development on requirements are really felt in two quite different ways. The first has to do with the actual requirements themselves--in other words, the things that we need in the way of materials and end items. Technology is constantly coming up with new and substitute materials,

which in some cases relieves the pressure in areas of short supply, and in other cases produces a better commodity. I need only mention titanium as a familiar example of a substitute material of great promise. Of course you recall Colonel Jarman's presentation last week. And what may our requirements look like in the future with the changing concept in weapons systems? I'll not belabor this point further as you heard much about it in Natural Resources, and will hear more during the Production Unit.

The people who are engaged in the day-to-day business of requirements planning, are also concerned with a quite different effect of research and development.

The planning for mobilization requirements is, as you now realize, a job of forecasting future needs. When you stop and consider that the great majority of military equipment and hardware is made to particular specifications, and that from the time you decide that you want certain items, 'til the time they could be delivered to you, may be years, it often turns out that research and development has rendered them obsolete before delivery. The net result of this is, that requirements planning is a never ending game.

And now, how about lead time? I almost hesitate to mention the subject before this audience. A couple of years ago one of your illustrious classmates lectured from this platform for a full fifty minutes on this very topic. I'm not going to do anything of the sort, but give me two minutes.

The factor of lead time is a very significant problem in all phases of logistic planning. While you will hear the term used to apply to many different situations, I'm referring to it here as the total time from when a plan is jelled, until you can deliver the goods to the forces that have a need for them. In between these two periods many actions occur.

First is the translation of the plan into specific requirements--then comes the budgeting process--if you pass that hurdle, procurement action takes place--actual production follows, and finally your tanks, or whatever they are, go into the "pipeline" on the way to the unit that wants the goods.

I can only give you very approximate figures as to how long a period this represents. Some of the steps are taking place concurrently so it is difficult to isolate any one. But generally speaking, better than two years will pass before a contract can be signed. Production lead-time will vary between wide limits, depending upon the item and other considerations--possibly from a few months to several years. Then in the pipeline for distribution to using units--on the order of three to six months. In the meantime, technology has advanced and some of your beautiful new equipment may already be obsolescent.

And now let's consider briefly the effect of the Budget and its impact in the area of requirements development. The effect here is very direct, because obviously if you're trying to come up with a list of requirements to be bought off the shelf or produced, no procurement action can even take place until final action by Congress to assure the necessary funds.

When we compute requirements for mobilization planning, it's sort of a sampling process, and as I mentioned earlier, we concern ourselves with roughly a thousand end items, which constitute the heavy drain against our resources.

But determining current requirements, where procurement action will follow, presents a very different situation. Although the items of major equipment for which contracts are to be let, may be relatively small numerically, the total number of items to be procured will be tremendous. And since actual procurement is to be initiated, the requirements computations must be detailed and complete. This is a time consuming and laborious task.

So now just how does the budget enter this picture to complicate an already difficult problem? You will find out more about budgetary planning in Unit VIII later in the year. But all of you have sufficient general knowledge of budget processes to know that requests for funds are all supported in terms of programs of some sort.

And now you set out with these programs that look pretty sound and logical, and you defend them before a whole series of review agencies, including the Services, the Department of Defense, the

Bureau of the Budget and finally Congress itself. And of course we know from long years of experience, that the funds we started out hoping to get, become less and less as each review takes place. If it's any consolation at all, one of our students last year gave an oral presentation and presented statistics to show that cuts by Congress averaged only five percent of funds requested by the President in his official budget message, while the really big cuts occurred in the earlier reviews.

But the really important thing is, what is the effect on your programs as the supporting dollars are being lopped off? Well, unfortunately, it's not measurable directly in terms of percentage cuts in the dollars. Every cut will create an imbalance of some sort, which necessitates a reappraisal and readjustment of your programs. The net effect actually, is a chain reaction amongst your many programs, the sum total of which constitutes the complete military budget.

I don't think I need carry this discussion any further, for you to realize that the requirements planners are having their problems while all this budget action is taking place. It means computations and recomputations, and no firm set of requirements is possible until Congress takes final action on the Appropriation Act.

Before bringing this talk to a close, I want to mention a few things with respect to the conduct of the course itself. Having already scanned your Curriculum books, I think you recognize a familiar pattern insofar as the general scheme of presentation is concerned. But let me highlight a few points.

I've emphasized the fact that logistic planning is born with strategic plans. Accordingly, your first lecture (this coming Monday) is going to be presented by Admiral Hedding, who is the director of the Joint Strategic Plans Group of the Joint Staff. It isn't our intention to try to make you strategic planners, but an understanding of how such plans are drawn up, and how they become the basis for requirements planning, I consider of vital importance. A full appreciation of this lecture is contingent upon fulfillment of an advance requirement on your part. There are

down in the classified section of the library, about fifty copies of the "JCS Program for Planning" to which I made reference a few minutes ago. It is Item 195 in your Bibliography. I urge you to read it and give it some study before 1030 Monday morning.

For the presentation on Tuesday, the 16th, we've prevailed once again on the Joint Staff. General Johnson, who is the director of the Joint Logistics Plans Group, is coming over with a team of seven of his Indians. In an all morning presentation they will show you the steps that are taken by the JLPG, in developing the logistic implications of joint war plans prepared within the Joint Staff.

I think you will find both of these presentations extremely interesting and basic to a full understanding of our present course. Incidentally, for some of you it may be a good briefing on your next assignment. Invariably some of our students are assigned to the Joint Staff upon graduation.

During the couple of weeks preceding the holidays, twenty-five of you will be giving oral presentations. Those of us on the Requirements Branch faculty have done our best to select subjects which will not be repetitious of material otherwise covered in study areas or in lectures. It is our hope that in so doing, we will enhance both your enthusiasm in preparing the papers, as well as the listening interest of your classmates.

As I pointed out to you this morning, one aspect of our branch mission is a study of the logistic systems of nations other than the United States. We consider this most important, to come to an understanding of at least some of the problems, we can expect to encounter in combined operations.

We are calling on eight of you, (from the group of twenty-five to make oral presentations) to delve into this subject and present it to the class. Three of you are going to prepare papers on the logistic systems of France, England, and the Netherlands, which we think will give us some interesting and revealing comparisons.

If we can make claim to anything unique with respect to our course, I think it would be this. Five of you are going to team up

and study the logistical support problems that are peculiar to the North Atlantic Treaty Organization. Then in the last week of the Unit, this group will make a panel presentation to the class, giving us the benefit of some of their high level research and study.

I think with the rapidly developing events in Europe, even just during this past month, the five of you concerned will find this an interesting challenge, and the rest of us will look forward with anticipation to your presentation, on this very live and timely subject.

In summarizing what I've said this morning, I'm going to do it this way.

Your studies between now and Christmas are going to take you into the area of logistic planning and logistic operations--particularly those related to requirements planning, and supply distribution. You are going to explore and study, some of those very real problems, which day in and day out, are being faced by military planners at all of the higher echelons of the military establishment. You will have the opportunity to see how this planning must be correlated with other government agencies, outside the Defense Department, which are charged with responsibilities in economic mobilization planning.

I wish I could tell you that these logistic problems you are going to delve into, were clear cut and easily solved. They are quite the opposite.

One of our speakers a couple of years ago, had this to say, and I quote him.

> "All you have to do, is to determine what forces will be needed, to meet what enemy, or combination of enemies, when and where they strike, where our forces should be deployed, with what they will be equipped, what will be needed to provide a continuous flow of supply to them, in order to insure this country a reasonable chance of survival--all accomplished in such a way, that in a democratic society such as ours, it will go along with you, and be willing to pay the price in a hundred ways."

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