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INTRODUCTION TO MATERIEL MANAGEMENT

Colonel Charles I. Davis, USA

NOTICE

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Reviewed by: Colonel Thomas C. Keach, USAF

Date: 12 January 1960

INDUSTRIAL COLLEGE OF THE ARMED FORCES

WASHINGTON, D. C.

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11 December 1959

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SPEAKER--Colonel Charles I. Davis, USA, Member of the Faculty, Industrial College of the Armed Forces

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Reporter: Ralph W. Bennett

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COLONEL DAVIS: General Houseman, Admiral Patrick: The purpose of this talk this morning is to introduce to you the Materiel Management Unit--the substance of the course as we will try to portray it to you. My particular job is to describe some of the essence of this thing that we call materiel management.

I'm going to try to do this by highlighting the nature and the scope of the unit, so that we can all have in mind a kind of a cohesive package that we want to get into as we go through the study of the unit, and to give you some benchmarks to pursue in your research, in your study, and in your questions with the guests that we will have, who are experts in the area.

I'm not going to answer questions. I'm going to ask questions. I'm asking a lot of questions in here as tip-offs to you as to the key points that we feel this unit will cover.

Now, rather than try to define specifically the term "materiel management," because I know of no officially accepted word description, I'm going to try to describe the area, more or less an inventory of the things that materiel management includes.

First, let's see why we study it. (Chart 1) The objectives of this unit are--

First, to give an insight into the principles, systems and procedures involved in providing material support of our national security

program.

Second, to provide an appreciation of the role of industry in the economy and in national security, and

Third, to give us an understanding of the relationships between the problems of management of military materiel programs and the management of industry and the national economy.

This study will provide an opportunity to--

First, analyze and understand the functioning of industry.

Second, review the influences of our economic and other institutions that have a bearing on our national security and our military preparedness.

Third, to learn something of the significance of technological progress and research and development in the overall management process.

A good look into these particular types of areas is essential to a balanced study of the economics of national security, which is the purpose of the entire course here at the College.

Let's see how Unit IV fits into this course. (Chart 2)

In Unit I, "Foundations," we studied Government organization and inter-agency relationships, and got a refresher in basic economic considerations.

In Unit II, "National Security Objectives and Requirements," we studied the methods by which our policies and our objectives are determined and our programs developed. In that unit we studied the blueprint, so to speak, of how we determine the course of our actions as a nation,

and the course we will take in doing our role as a world power.

The other element of Unit II pertained to requirements. There we emphasized the programs--not the numbers of things but the programs--required to make it possible for us to attain our objectives.

But in another sense, requirements of national security programs can be thought of as being completely in the physical or material category--the things and services that we need with which to accomplish our mission. Our study in Unit IV deals with this meaning of requirements. I point this out here because I think it's absolutely essential that we understand that requirements is the first step in materiel management.

Our human and physical resources were studied in Unit III. There we looked at our wealth in resources with respect to their general availability for helping us to meet our requirements toward accomplishment of our objectives. Unit III didn't deal with the application of resources specifically to our national security programs. In this course we do deal with the application of our resources, efforts, material, men toward the meeting of our objectives. In other words, it's a sort of bringing together systematically all of our resources and efforts and manpower and dollars toward the accomplishment of our objectives.

In later units of the course, particularly those dealing with stabilization, capability, and readiness, we will, I think, find some very valuable lessons gained in Unit IV toward such things as stabilization, management, capability requiring management, and, most especially, in Unit IX, in your final problem on readiness.

These are the principal reasons, then, why we study materiel management.

Now let's look at the scope of the areas that we're going to study.

Think of this unit, if you will, as being concerned chiefly with managing the resources, all of them, required to give us national security. We will deal largely with the basic policies, the organizational structures, and the operating systems used in the direction of resources toward the support of military programs.

Although we will concentrate on the military aspects, we will not overlook other aspects of it as well. In fact, one of our key areas of interest in the entire course, as well as in Unit IV, is our economic well-being, our civilian programs, our civilian economy.

But we think of our civilian economy as being managed generally under our free enterprise system. But we have a conflict--not a conflict but an interrelationship--that makes it absolutely essential that when we consider problems of the civilian economy, we also consider problems of our materiel programs, our military programs, because military programs and the civilian economy depend on the same industrial base for their support. This is enough to make them inseparable.

One of the biggest problems in this entire area of materiel management will, I believe, be revealed to you in your industry studies, where the first big bite that is taken out of our overall industrial preparedness, our overall industrial capability, is the support of the civilian economy--

maybe not taken out first before military needs are met, but it must be considered before we can determine what the overall readiness capability for an emergency is of our industrial base.

(Chart 21) Now, here are some of what I call concepts--basically they are considerations, considerations of concepts--as to the types of material iel management systems that we develop and employ. I'll discuss each one of these; so you don't need to try to go through all of them now.

It's our intention in this course to cover all facets of materiel management. But, even so, it is most important that you approach the study with an inquisitive mind. And here are some "for instances" that I want to give you that I think fall within these areas of concept consideration.

First, in connection with the development and production of items peculiar to military use, what is the best method for guaranteeing a proper production base at the least overall cost to the Government, and so that it will be the most responsive to our needs? One method would maintain production lines turning out military items at just a large enough rate that they would keep running. This brings on pretty uneconomical procurement of those items. Another method is to produce in quantity, buy in quantity, stockpile, let the production lines close, let them be re-tooled for manufacture of other items. These are the production lines that don't belong to us. I'm not talking about arsenals.

Each one of these systems has its advantages, and each has its disadvantages. When we stockpile, to any degree, expensive items,

we buy a lot of obsolescence into our inventories, and we have to face the cost of re-tooling if we have to go back and produce more items.

I mentioned the arsenal system. How does the arsenal system that we have within the control of the military fit into this thing on production base?

There are considerations in determining whether we should manage through functional organization or commodity control, item control. What factors enter into such determinations for the various categories of items, weapons, and weapon systems? Is it inevitable that commodity control and functional organization must work at cross purposes? How are decisions made in the services as to which system to use for a particular item or weapon system? When in the life cycle of an item is it essential that functional control be subordinated to item control? Somewhere along the line it must be, because the guy who's using the item, the control that he exercises over it is item control. So if you start out under a functional organization, somewhere along the line there must be a shift over.

What are the effects of overall centralized control and management as opposed to decentralization, that we've heard so much about recently? And maybe we have seen centralization. I don't know, but I think you can find out during this course. For instance, what's the real difference between the overall functioning of the Air Materiel Command in the Air Force and its strong reliance on the weapon system concept of management--what's the difference between this philosophy and that

of the Army and Navy in their technical services and technical bureaus?

The manager's efforts must always be so oriented that his provisioning actions keep closer tab on items with a high rate of obsolescence than on the more stable items. At some phase in the life cycle of an item he must place this item in one of these categories. It's either one of rapid obsolescence or it's a stable item. It makes all the difference as to the type of management he applies to this item if he's going to do an overall economical job of management. What are the mechanics used in the services for policing such systems, and how effective are they? How does it contribute to our overall readiness capability within limited budgets, and so on?

In effecting supply control operations, the strong back part of this job, such as requirements determination, initial procurement, initial issue, requisitioning, resupply, and replacement--in doing these we often find that low-cost items receive just as much effort in our management as do high-cost items. How does the manager assure that his supply system and his supply pipeline are so geared to the demands placed on them that his operation will be responsive automatically to the more pressing requirements? He must have his activities so oriented that his system doesn't swallow the camel while straining at the gnat. I think most of us have seen examples of this type of thing in logistic management.

What are the factors in this area which make peacetime operations so completely different from wartime operations? And how do our systems that are in effect now lend themselves to being phased into an emergency

type operation?

In distribution of materiel from producer to user there must be a close relationship between all aspects of the logistic support operation. For instance, the rate of consumption, expenditure, attrition, or obsolescence of an item must be the basis for determining its level in reserve, its rate of flow through the resupply system, its plan of maintenance and rebuild, its method of movement through the system--whether by routine or premium transportation--and, finally, its replacement and elimination from the system. What are the criteria used by the services in the establishment and operation of these aspects of logistical support?

Optimum use of premium transportation overall as a service, such as long-distance and large-cargo lifts by air, should result in dollar savings through reduced stock levels, reduced handling and rehandling of supplies and equipment, a reduced need for packaging materials, and the like. But there is a cut-off point where we can make economical use of this type of transportation. What are our systems in the services for managing and controlling this thing? What are these factors of availability or lack of availability, the high cost, and the procedures for allocation and control of something like the high-premium air lift--what do these factors have to do in the determination of how this capability is used in our overall management system?

And, finally, here in recent years we have had some developments in management that apply in the military area and some of them apply particularly in the materiel area. These were not developed for materiel

management, with the possible exception of cataloging, or maybe standardization too to some extent. These are tools of management that have been developed that we are now making considerable use of in our materiel programs. How are these tools being used?

I think as we consider these things that I have referred to as we go through, we will get a feel as to how we are approaching the management problem.

This job of material support of armed forces is big and complex business. Mr. C. W. Borklund, Editor of "Armed Forces Management," said in the November issue: "It is hardly any secret that a new type of business executive has come into being since World War II--the military man (usually with an eagle or some stars on his shoulders or a high civil service rating in his pocket) who is charged with helping to manage the largest business operation ever known to this country."

(Chart 3) These figures give you some idea as to the size of the operation we are talking about. Over 140 billion dollars in assets. This is real and personal property. And some figures run that on up higher if you take in some of our production type equipment and maybe one or two other small categories. Our procurement is about 20 billion dollars a year. Our foreign aid program, military aid, is one-quarter to one-half billion dollars a year to over 40 countries. Would you think that the services had disposed of over 8 billion dollars worth of property last year? This is acquisition cost. The services deal in more than 3 million items; and with lead times of 2 to 7 years, and this is just

a bite out of the middle of it. Some of them are longer, as you know.

When you consider that over a half million people are engaged in operating this system, and that over two and a half million Armed Forces are spread all over the world depending on it, it takes on a pretty serious connotation.

These military activities, by asset comparison, are equivalent to our 15 largest U. S. industrial corporations.

But let's look at some of the complexities as well as the size. Here are some factors which bring about complexity: first, from within the Government.

One type of complication arises from congressional interests. These are found chiefly in such areas as weapons systems, forces to be supported, appropriations, and regulatory legislation.

Here is how some of these interests have been manifested recently and how military programs can be affected thereby. The Armed Services Committees of Congress during the past few years have been very interested in the missiles programs of the services. Why? Because these new weapons systems have an effect on the forces and the missions of the services. Also, during our annual budget hearings, Congress gets completely into the details of military programs. This is all right, but it's a complexity.

Then there are various pieces of legislation in our procurement area--the Buy American Act, aid to small business, labor depressed areas, and so on.

Congress watches over our expenditures. The General Accounting Office monitors this directly under the eye of Congress.

Other committees, such as the Government Operations Committee, spend a great deal of time looking at our accomplishments. They review 3
our decision making in this area, as well as our accomplishments. And a lot of these reviews of our decision making put us pretty well in the middle sometimes. It's pretty hard to always be able to justify your decision made a few years back in the face of events that have taken place in the meantime. And some of these questionable decisions have been made in the materiel area.

Bureau of the Budget and Treasury interests cause complexity 4
to the military materiel manager.

Of course in the areas of the development of the Federal budget or the funding of Government, if there comes a need to cut back the overall availability of funds, the services have to reprogram, revise their schedules, and in some cases even cut back procurement. It's a pretty uneconomical job.

Also the Bureau of the Budget, in their apportionment process, holds the purse strings. Here we have a requirement for the services to completely and in detail rejustify their programs to the Bureau of the Budget before they can get money that has already been appropriated by Congress. Don't ever let anybody tell you that the apportionment process doesn't affect the materiel manager, in reprogramming, revising schedules, and so on.

The Office of the Secretary of Defense influences our service materiel management.

The problem of roles and missions is very important in this area. And the services look to the Secretary of Defense for program guidance in all of their military management and particularly in their materiel management. The materiel manager is faced with such problems as what weapon systems to develop and procure, what projection of forces to plan for, and what system of logistic support to develop.

For example, when and where is there an across-the-board military look taken at the family of weapon systems to be employed by all the services in 1970 or 1975? People are looking at this, but are the military? Is there a military look taken across the board at all this?

How does the materiel manager get the decisions he needs in this area? And, when he doesn't get them on time, how does be plan without? He can't wait.

Finally, the Joint Chiefs of Staff organization is playing a constantly increasing role since the 1958 reorganization in actions having a bearing on materiel management. Chief among these is the balancing of missions and forces with the requirements and capabilities of all the services and all the operating commands toward arriving at the optimum military readiness posture. And the JCS is now being called upon for budgetary advice.

All these troublesome factors that I've just cited are not necessarily bad. And I'm not citing them as trying to highlight them from

the point of view of trying to get rid of them. We can't. They are a part of our way of doing business. My reason for mentioning them is that we've got to learn how to deal with them.

But these are not all. These are just the ones that were within Government. Let's look outside of Government.

Pressures get awfully strong in this business. Demands are made on the services for production and procurement from specific manufacturers. Members of Congress and businessmen alike bring these pressures to bear on the services.

We have to contend with influences of industrial and trade associations in the areas of sales and advertising; of the legislation lobby on Government programs; and of the munitions lobby on certain weapons and weapon systems. I don't need to cite examples. Some of these have been aired rather thoroughly recently as a result of official inquiry and publicity.

Let's be aware of these types of pressures and influences. We can't eliminate them, but let's be aware of them so that we will know how to deal with them. Let's look at our systems and see if they are prepared to take proper cognizance of the possible ill effects of these types of pressures and influences and troublesome factors that we run into.

These things that I have been discussing represent the nature, the magnitude, and the importance of the problems which our studies in this unit will consider. I think this defines the subject rather well

and kind of sets the stage for our further consideration. We want to find out as much as we can about its current status and its trends, and try to understand how the practices currently in effect can be improved to give us better management. Let's see if we can find out just how well we are doing the job.

In that connection, Mr. McNeil, just before he retired as Comptroller of the Department of Defense, had this to say: "The wealth of individual talent running this (Defense Department) business is truly impressive and inspiring. Nowhere else in the country has so much ability been assembled in one place. That stimulating atmosphere is the one thing I most hate to leave." This type of an observation coming from a man like Mr. McNeil, who has been as closely associated with this business side of the Defense Department as he has for his entire life, to me is a pretty good indication, maybe not as to how well we are doing the job, but as to how much ability we have to do the job if we organize and go about it right.

Now let's take a look at some of the fundamental characteristics of management in further delineation of our study in this area.

In military activity, management is generally thought of as being synonymous with command. The commander <u>is</u> the manager. He has the complete responsibility for the accomplishment of his mission, and he has the authority for the direction of his effort toward the accomplishment of that mission.

The primary function of the manager, the military manager, as

we look at him in this unit, is the direction of his resources of men and materiel toward accomplishing his mission. In the process of such direction, management consists of systematic plans, to give us a course of action; and organization, to give us a structure through which to bring to bear the efforts and our capabilities toward meeting our objectives.

Another thing we need to consider is the level at which we are going to analyze this subject.

Some of the types of activity involved in this business include such functional fields as the evaluation of requirements and the establishment of priorities for their support; and the planning for the development, manufacture, and testing of weapon systems. It requires programing for the production and the phased acquisition of these items in accordance with a materiel plan and a supply program. And it includes the policies and systems and activities required to give continuity and common purpose to uninterrupted logistical support of our Armed Forces.

(Chart 4) Here is one method of reflecting the cycle through which an item or a weapon or a weapon system passes during its consideration on coming into or being brought into the system. In the development phase we have one major thing to look for, and that is, at this time we must design into the item the characteristics that will make it capable, qualitatively, of doing the job that we are expecting it to do when it reaches the utilization stage. Don't quarrel with the figures. These are for example only. Some of the items require less and some require more in the various phases. In some cases an item doesn't stay with us 12 years and

in some cases it stays longer than 20.

In the testing phase we test operationally, from the standpoint of seeing how well our design has met the requirements of utilization. At the end of the operations testing or in consonance with the operations testing, we give the item a technical test for maintainability and dependability. And when this is completed, assuming that everything is acceptable--the items may require modification during this process-- then we have standardization of the item, and it is adopted into the system.

The acquisition and supply phases are self-explanatory, as is the disposition phase. But in the utilization phase, immediately when an item is issued for use, it starts requiring maintenance. Sometimes even before it is issued for use, it starts requiring in-storage maintenance. And soon after, we start thinking about its replacement, or at least its modernization because of this factor of obsolescence.

(Chart 5) Let's take a little closer look into that one phase of utilization. Again these figures are for example only.

The item enters the system at the zero point in time, and sometime early, obsolescence sets in. This obsolescence may begin before the item is issued, but at least it starts early in the system.

Mainly the reason for showing you this is to indicate that decision must come at the proper time at this particular phase of the life of an item in order that we can do proper management. For instance, if we have decided that an item is going to be washed out of the system here at the 10-year point in time, that decision must come in time. You can't

decide it right here (indicating) economically. It must come at a point in time somewhere back along the scale that will make it possible for us to stop not only the procurement of the item, but stop procurement of repair parts and components for it, and design and plan our maintenance program so that we stop maintenance back here, rather than to have both of these operations continue right up to the day you dispose of the item and then you have the system full of parts peculiar and the old items full of maintenance effort and dollars out of which you get nothing. Management of this type of thing we call our logistic system. The management that we are talking about of this type of thing here in this unit is management of programs at the national level.

Now that we have delineated the study area, let's see some of the problems that go along with it.

In the face of advancing technology, changing strategic and tactical concepts, and the increasing complexity and costs, the materiel manager is plagued constantly with three major obstacles; first, keeping up with changes in qualitative needs. The planes, ships, tanks, vehicles, and ammunition that once did the job well will no longer suffice. Second, keeping the right quantity of modern and effective equipment in his inventories. We've got a constant threat; therefore, we have to stay ready. And, third, limited peacetime budgetary support. We can't buy all everything we would like to down through this cycle here. When you develop items that you know are going to be effective, you can't go out and buy enough to replace everything that you've got in your system.

We can't throw away the old items. Most of them are still good. You don't come up to the end of your cycle with all of your systems that have obsolesced on you and that you have items coming along in the replacement pipeline behind them--you don't wind up out here with those things absolutely worthless. They're good, and we have to make good use of them.

And this brings about duplication of items in our system. Imagine the problems caused by a type of communications network that has half of the items old and half of them new. Imagine the added burden of the operation of the system in the training force operation, but also the maintenance of two types of highly technical types of items such as are required in our communications networks.

But these three basic hurdles--of advancing technology, limited funds, and the requirement to stay ready--are not the only troubles, not the only problems. The manager is concerned with the phasing of new developments in materiel with new strategic and tactical concepts; and, if possible, he's got to try to do this three, five, seven years in projection.

His distribution and maintenance problems and the problems of storage, movement, and supply control, are with him constantly. He must not let obsolescence overtake his inventories; and he's got to dispose, profitably if he can, of the items that have become obsolete to his future needs.

(Chart 6) Don't worry about the amount of stuff on this chart.

There are eleven basic, call them functions, call them consideration areas, or what have you; and there are 36 sub-areas of functions, tasks, jobs, duties, or whatever you want to call them. That's one purpose of showing it to you like this. It's a big and complicated and diverse operation. My main purpose of showing it is interrelationships, and I want to just cite a couple.

Take Item 4, Development. Out of that phase, that step, those considerations, take the term "effectiveness." It's during the development cycle of the item that, if effectiveness is properly handled, it will do the job that we want it to do down here in the utilization phase. If that effectiveness is going to be built into this item during the development phase, it will be the result of the proper determination back in the very first stage of the qualitative type requirement that somebody decided should go into that item; and he had his eye on what we were going to expect of the item down here in this phase.

One other point--timing--also in step number 4--technological advances. If the qualitative requirements designed into the item back here require such a long time in development, shooting at this area down here with the capability, technological advances may overtake it, and your effort may be wasted. You will never get the item into the utilization phase.

It's in these major functional areas that our studies will be centered. Obviously we can't go into all of them in detail. But we will examine, in fairly good depth, some of the principles behind the systems

that encompass all these functions. More specifically, we will explore management systems from the viewpoint of the policy considerations which have influenced their development.

These systems will include those in use in the military departments, such as their systems for managing their procurement; their programs for the emergency production of critical items; and some of their principal logistics systems.

We will analyze some of the methods employed in joint logistics, such as our single manager and our Armed Forces Supply Support Center. These systems will be examined with people who know them well, and we can evaluate what their effectiveness is and how well they would serve us in case of emergency.

We will look at management in our unified commands. We will discuss with our NATO representatives some of the problems and trends in NATO logistics or combined or international logistics.

Finally, in this broad area of management systems, we will look at industry. I want to emphasize this aspect of the unit for just a second.

It is just as essential that we understand the industrial side of our national security as it is that we recognize what our security programs are and how they are developed.

Since we are so dependent on our industrial base, we should know how it functions. I will cite one specific relationship. That is the economic implications of our current military programs. The budgetary support and time-phasing which these programs require put our military

decision makers squarely in the business of evaluating industry's capability and industry's responsiveness to military programs.

Those who handle national security matters should, therefore, have some idea as to the fundamentals of industrial management. Without such knowledge and appreciation, men who are responsible for making military decisions can't be expected to make the right decisions.

I might say here that the necessity for this knowledge and appreciation is not reserved solely for the logistic man. Until all commanders and all planners and all logistics managers alike accept this principle, we can't expect to have good management. Have you ever encountered a commander, or have you ever been one, that had no respect for limitation on resources, or the time factor? It takes a long time to produce military goods, regardless of how capable industry may be. Some of these things I have shown here, the cycle, the magnitude of functions, it takes a long time to turn out the goods, and it takes a long time to run them through our system and put them in the hands of the user.

Unit IV is the only place in the ICAF course where we look at facts such as these. This unit is designed to help you to explore and evaluate the effectiveness of the way we are trying to do the job.

If you are reminded now that in our industry studies we are going to approach it through eight committee studies, you will know that we are going to look inside of eight of our major industries. We are going to visit industry in January. And I believe that after these industry studies, our visits with industry, and talking with industrial managers,

we'll have a pretty good idea of what this industry area is and basically how it functions.

One specific category of industrial management which we will consider is production processes--the actual manufacture of items. These include such factors and effects as the impact of scientific and technological progress within an industry, the impact of advance production techniques, automation, quality control, industry's use of automatic data controls, the effects of military programs within that industry, the implications of labor-management problems on productivity, and the like.

We should get an idea of how adaptable our current production base is to the various conditions of emergency that we will also study about here in the course.

Now, in the area of procurement, there are many major obstacles facing the people who plan and carry out our materiel procurement. Are these obstacles forced on us, or are they self-imposed?

How valid are the complaints levied at the services for making unwise procurements? And there have been many.

How, under the mountain of controls, can the procurement officer do his job so effectively that he can stand up under the test of the inquisitive approach by Congress and the public?

We will hear people from the services, from Congress, and from industry talk about this; and we should be able to get some idea as to the problems that they identify and the corrective measures that they will

probably suggest, as to how effective those would be if integrated into our current procurement activities.

One specific thing on procurement: Our current procurement laws are based on advertised procurement, but those laws permit 17 exceptions whereby we can do negotiated procurement. And the services do negotiated procurement. This is one of the things that I think you will probably get from your Representative from Congress who talks in this area--the services leaning so heavily on negotiated procurement. Why don't we like advertised procurement? Is it because of the rigid specifications that are required and the heavy administrative work load? Or is it because through negotiated procurement we can get more for our money? Or can we? Do we? Are we as well prepared to take advantage of the blessings that are afforded by our current procurement laws that direct advertised procurement--are we as well prepared to take advantage of those things as the people with whom we negotiate in industry? Or to use against us the very, very stringent requirement of administrative controls in advertised procurement?

One other area, that we are adding into the unit this year for the first time, is the implications of space logistics in our military programs. These programs are currently involving the services to the tune of millions and millions of dollars. Maybe it's getting less as the result of the reorganization this week. But, anyway, efforts as well as funds are going into these programs, and under strict budget ceilings year in and year out, increased effort in this area is going to have to cut into other programs of the services. What will the effect be? We will have some of the

people from the services who have been dealing with this thing for a long while that should be able to give us a good idea.

(Chart 7) Now, in summary I'd like to show you one conception of the overall materiel management task. Listed against the red background are our adversaries. Listed on the blue background are our attributes, our capabilities, our team-mates. Your front line of our team-mates there--maybe we think of them as planners. Your second line--the doers, the getters, the providers.

Once a decision is made that an item is going to come into the system, somebody has got to carry the ball. That's the materiel manager. How well he does the job and how nearly he comes to crossing the goal line of successful accomplishment depends on how well he makes use of these people (planners); how much he knows about what they were doing when they did their part of the job; and it depends on how well he actually makes use of this group of blockers (red), how well they do their job, how well they are organized, and how well they are directed.

Through the study and analysis on the things I've mentioned today, gentlemen, I believe we will be able to get a fairly good grasp of the problems that face our material managers. We ought to tell how well we are doing the job. We ought to be able to identify and isolate what we need further in this area to improve our methods of accomplishing the task. And, third, just how we can go about integrating these ideas into our current system. And that I think is the one key thing for us to take with us out of this course on materiel management.

We must understand what all of these things that I've talked about and all these things I've shown--we must understand what the implications are in the area of, not just materiel management, but in area of providing national security. And if we understand that as a result of this unit, you will have accomplished the purpose of Unit IV.

Thank you.

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