



MODERN MATERIEL MANAGEMENT

Col George W. Marthens

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Reviewed by: Col Ingram Date 8 Feb 63

INDUSTRIAL COLLEGE OF THE ARMED FORCES
WASHINGTON, D. C.

1962 - 1963

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3 December 1962

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Publication No. L63-80

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CAPTAIN FOOTE: Gentlemen:

The faculty in the last few days has been bombarded with mild protestations of the fact that there was no question and answer period after Dr. Sidky's lecture Thursday, so much so that we thought it might be well worth while to take a minute to clear the record on this subject.

It is the policy of the school that, whenever we have a lecture of opportunity like that, we give every opportunity to the class to question in the period, even to the extent of rescheduling our internal schedule if necessary.

Unfortunately, on Thursday, the reason that Dr. Sidky was here was at his request to get a briefing and to discuss with Admiral Rose the operation of this school, and we squeezed his lecture in.

As you probably noted, the 30-minute lecture took 50 minutes, and we had no alternative. It was just one of those things.

So much for that.

Today we start off Unit IV, Materiel Management. As a lead-off lecturer, explainer, or whatever the word is, here is Colonel George W. Marthens.

COLONEL MARTHENS: General Stoughton, Gentlemen:

This morning it is my pleasure to speak to the class in the way of an introduction to Unit IV of your course of instruction here at the Industrial College.

In preparing to do this, I felt that I should touch on areas that might make it

~~possible for you all to visualize and perhaps to gain an appreciation of the scope and depth, as well as the many interrelationships, of the materiel management field when you consider it and relate it to the overall subject of national security.~~

We have a long list of distinguished speakers, top men, and really the experts in the field, who will be specific with you in all the various elements of the management field.

Your first speaker in Unit IV, later this morning, General Schriever, Commander of the Air Force Systems Command, is indicative of the caliber of men that feel the importance of materiel management cannot be overstated, and who also feel that the importance of this subject to the Department of Defense and to the country itself is such that they give freely their time to make their presentations to our classes here at the Industrial College.

Let me quote from General Schriever's opening address at a recent Management Conference which was sponsored by his Command.

"Management is our theme because management is our need. Increased scientific and engineering competence will not speed up the rate of our technical progress, unless we learn to manage our resources more wisely and efficiently. Management is the pacing factor. We can never get away from this basic fact."

A recent news item that you all may have seen was based on a directive issued by Deputy Defense Secretary Gilpatric. The directive stated that a thorough study of all Department of Defense education and training programs to meet requirements for management training of military and civilian personnel

~~would be conducted between now and early February 1963.~~

~~Indication of the importance of the subject is seen by the membership of this study group. The group will be headed by Assistant Secretary of Defense for Manpower, Norman S. Paul, and includes the Secretaries of all the military departments, the Director of Defense, Research and Engineering, the Chairman of the Joint Chiefs of Staff, the Assistant Secretary of Defense for Installations and Logistics, the Assistant Secretary of Defense (Comptroller), and the Director of the Defense Supply Agency.~~

~~In the light of such statements by General Schriever and the establishment of such committees as I've mentioned, it is quite evident that management is of prime importance, more so in our present-day operations than ever in the past, and undoubtedly even more so in the future.~~

~~Unit IV, as a part of your overall course here at the Industrial College, is directly oriented to this all-important management field.~~

~~Now, while I can in no way deal with the subject in the manner our speakers will, I do hope that my little introductory presentation will, at least, set the stage for you in your work in Unit IV.~~

~~Today is December 3, 1962. I doubt if I need to remind any of you that in a few days it will be December 7, just 21 years from a day we all remember very well.~~

~~"PEARL HARBOR"~~

~~That day marked for us the beginning of the most destructive war the world has ever seen, at least until the present date. And it also marked the~~

~~beginning of a revolution in science~~ and technology which has been and is drastically reshaping the world.

There is hardly a field in the physical sciences or in the life and social sciences which is not changing. Every day we see evidence of this explosive growth of knowledge, and it certainly challenges our imagination, our ability, and our judgment.

Contrast for me, if you will, in your minds, the aircraft of World War II with our present-day aircraft. What changes we can all see that have taken place during these last 20-some years! Consider the mid-August Twin Russian orbital flights in their Vostok II and III capsules--a combined total of 112 orbits--a total of 2,860,000 miles in space, sleeping enroute, eating, and then landing safely at the designated spot. In truth, it is really much easier now for us all to visualize space stations, moonlandings, and who knows today how far on out we really will go.

I'm sure you can all visualize the transition from World War II antiaircraft guns to the Hercules and the Zeus, and the evolution from battleships and pigboats to guided missile ships and Polaris submarines. Think of IRBM's and ICBM's, as well as many other even more exotic systems that are now or soon will be standard items for our Armed Forces.

As drastic and as dramatic as these changes have been and will be, all indications are that such changes in our weapons for war will continue to be developed at an even more accelerated rate.

The mysteries of sea and space are being researched and explained, and

are being utilized in the development of unbelievable products and concepts with great potential for both peacetime and wartime use.

It can be truly startling if you let yourselves think of future aspects, problems, and even perhaps of what the consequences of this technological revolution might mean to the world.

Now, why have I mentioned this revolution and the vast changes being brought about by science and technology? Well, this revolution has been, is, and in the future will be even more so characterized by fantastically increasing costs and extreme complexity in weapon systems and the logistic support which they will require.

The important thing, especially to all of us here at the Industrial College, and in particular in this unit of our course, is the question: Will management be able to keep pace with this technological revolution, or are we creating such complex systems that they could ultimately lead to management's inability to keep pace?

The problem of management, and particularly materiel management, fits squarely in the middle of this technological revolution, and Unit IV of our course here at the Industrial College is designed to afford you the opportunity to gain greater understanding, plus an appreciation of the principal factors involved in the management tasks and functionings in their broadest sense.

We want to try to give you all an idea, at least in order of magnitude, of the size and of the broadness of scope that in fact is basic to the material management field.

Unit IV is organized to explore this entire area. The readings, the lectures and the seminars, with their panels of experts, and the written work are all designed to acquaint you with and to stimulate you in the overall field.

So, therefore, I shall focus part of my attention to only the broadest aspects of material management and leave the breakdowns and the analyses of the parameters that some of my statistics and facts should establish in your minds to be treated throughout Unit IV itself.

We also hope that out of this little talk this morning you will be alerted to areas to explore in your research and your study and in particular in questions to our guest lecturers and panelists.

Now let's look into Unit IV itself. Unit IV is concerned with the study, at the level of national policy and programs, of the acquisition of military materiel and its management; that is to say, its direction and application to the purpose of national security.

National procurement policies, plans, and programs will be examined in terms of their roles in the implementation of national policy, including their impact upon our national economy and those of foreign countries.

Now, what are the specific objectives of Unit IV, Materiel Management?

There are many, but these three are basic. The first is to provide you with a background that will give you an insight into the principles, systems, and procedures involved in providing materiel support for our national security program.

~~The second is to present an overall picture of material management and to do this in such a manner that it will provide you with an appreciation of the role of industry in the economy and in national security.~~

~~The third objective is aimed at enabling you to gain an understanding of the relationships between the problems involved in the management of military materiel programs and the management of industry and the national economy as well.~~

~~Now, these are indeed pretty broad objectives, but they are basic to you in your work here at the College.~~

Our course of study will provide you the opportunity to analyze and understand the functioning of industry. It will enable you to review the influences of our economic and other institutions that may have a bearing on our military preparedness and our national security. And, finally, it will enable you to learn something of the significance and the relationships between research and development, technological progress, and the overall materiel management process.

An understanding of these areas is essential to a balanced study of the economics of national security--which is the purpose of your year's course here at the College.

Now let's see how Unit IV fits into that overall course.

In Unit I, Foundations, we studied the United States position today, had a review of economics, considered some management principles and concepts, and touched on modern warfare and strategy.

In Unit II, ~~Management of National Security Programs and Budgets~~, we studied policy formulation, ~~how policy is translated into programs~~, and how they are managed and financed. ~~Our human and natural resources were studied in Unit III. We considered our wealth in resources with respect to their availability for meeting our requirements toward the accomplishment of our objectives in national security.~~

~~Now Unit IV--Unit IV is concerned with the application of our resources, efforts, materiel, and manpower toward meeting these objectives. In short, we will be concerned mainly with managing all the resources required to give us national security.~~

~~Although we will concentrate on the military aspects, we will not overlook other aspects as well. In fact, one of our key areas of interest is the overall economic well-being. I am sure that you all will recognize that there is a strong interrelationship between the civilian economy and the military programs, especially since both are dependent upon the same industrial base.~~

Now, I've implied that the materiel management job is big and important. Let's take a quick look at some of those statistics I mentioned, and a little reflection regarding them will prove my other statement regarding importance. The magnitude of the job will become very evident and, when I say that I feel that material management, as related to the Department of Defense, is concerned with the largest business operation in this country and perhaps in the world, I don't think I can be accused of an overstatement.

The charts I shall now make use of should give you some idea as to the size,

~~complexity, and costs involved in the subject we are discussing.~~

~~Here you can see the dollar value of the inventory of real and personal property, which is steadily rising. Last year it was 158 billion 508 million dollars. We don't have a consolidated figure for FY 62 as yet.~~

Look at our annual procurement -- \$20 to \$25 billion each year, and no prospect of it decreasing from all indications. The chart shows only one-half of FY 62, but by merely doubling the 12.3 figure you will maintain the upward trend that the chart shows.

Here's the dollar value of our inventory of materiel and supplies. In 1961 it was over \$122 billions, and 1962 will show another large increase.

The storage space for that inventory which, by the way, contains more than 3.5 million items, and is growing, takes a lot of floor space and a lot of taking care of. The slide shows that the area required is being gradually reduced at present, but that's because in part at least of lower stock levels, faster delivery, and smaller unit size on many items that require covered storage. But the area of that storage is also important. It is still over 344 million square feet. That figure does not include such large amounts of storage space requirements as are generated by liquid fuels, ammunition, and cold storage. The figure includes only major installations and depots. Less space costs more money now. It costs us more now for that 344 million square feet that we are using today than it did for double that amount of square footage that we used five years ago--twice as much now for half as much space.

That large inventory to be taken care of makes another interesting statistic

come to the surface, and it is directly related to the technological revolution I mentioned at the beginning of this talk. Disposal--here is a field in management that cannot be overlooked. Our annual disposal program for items which we no longer need has amounted to as high as \$300 million-worth of "junk" in one year, and this return was on an acquisition cost which has run between \$8 and \$10 billion.

Last year, fiscal 1962, was one of our best years in this respect. Disposal dollars returned to the Treasury were only \$114.7 million. So, as far as disposal goes, we are becoming better managers. At least, we have less "junk" to sell.

Big items for management? Yes. And we shouldn't forget our foreign aid programs--over \$6.1 billion for the year ending 30 June 1961, and about the same amount of new money each year. And don't forget that this gigantic management job involves about 80 foreign countries around the world.

And people, yes, people. These are important things for us to think about, and management here is a very important element. With regard to people, there are about 8.5 million people and their families that are directly affected by Department of Defense policies and procedures. And there are more than one-half million people who actively devote their time, labor, and thought to just making the materiel system operate.

I hope that the statistics have served to bring out--and I've used only a few of the many that are available--that the materiel management function is not only a big one but also a very complex one, so much so that it is of vital importance

when considered in our overall national security program.

But let me just mention a few other areas of materiel management that you will investigate during this unit and that you should carefully consider in expanding and developing your perspectives regarding this function. I shall put them to you in a questioning way--which is a very good way for you to approach any field of study.

Should we manage through functional organization or through item control?

What factors should be considered in determining the system of support any particular weapon system should use?

Is centralized control and management better than decentralization? We've heard a lot about this one lately, and I'm sure there will be a lot more heard about it during the next session of Congress.

Distribution, requirements, consumption, procurement, obsolescence, attrition, budget, reserves, maintenance, transportation, and on and on--the areas of materiel management seem unlimited. And, as the technological revolution brings new concepts and weapons to the fore, more problems and more responsibilities arise for the manager.

Did you know that the cost of maintenance alone amounts to 20 percent of the annual Department of Defense Budget and requires 650,000 military personnel to perform it--just maintenance? This is definitely a management process.

In recent years there have been some developments which have assisted, and in some cases quite substantially, in the materiel management field. I

~~refer to such things as cataloging, standardization, and various types of automatic data processing. We shall study these tools of management and how they are used, and shall consider what we can do to improve our effective utilization of such tools.~~

~~Now, so far I've raised some points concerning the problems and complexities that are inherent in the organization and functioning of our materiel systems. But there are other complexities that arise from outside the military-industrial system. There are those that develop from within government, wherein the Department of Defense is a part of a larger framework of government organization.~~

There are others that arise from Congressional interests. I refer to such areas as weapon systems, forces, appropriations, procurement, establishment or disestablishment of posts, depots, and hospitals, and also such things as regulatory legislation that requires use of the Buy American Act, and aid to small business and to labor-depressed areas. And there are others. Of course we have heard of the Congressional Committees, and you've heard of, and will hear a great deal more of, the Bureau of the Budget and the Comptroller, here at the College.

The Office of the Secretary of Defense has an important influence on our service materiel management, and that influence is becoming more profound and very probably will become even more so. The problem of roles and missions is very important in this area, and the services are looking to the Secretary of Defense for program guidance in all of their related management

functions.

~~You've also been exposed to the constantly increasing role of the Joint Chiefs of Staff and in actions particularly having a bearing on military materiel. 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. They are also being called upon for budgetary advice and, in my opinion, in the future will be called on even more so.~~

~~Complex? Yes. But the complexities which I have been citing are all a part of our way of doing business. We cannot get rid of them so we must learn to deal with them. That's all a part of materiel management.~~

Thus far I have only touched on the nature, the magnitude, and the importance of materiel management. During Unit IV we will subject it all to much deeper consideration.

Obviously, we cannot examine all the functions of materiel management in any great detail during the time period allotted for this unit. However, we will examine in fairly good depth some of the principles behind the systems that encompass all these functions. We will explore the management system from the viewpoint of policy considerations which have influenced their development. This will include the systems in use by the military departments for managing such things as procurement, their programs for the emergency production of critical items, and some of their principal logistic systems.

No study of materiel management would be complete without a consideration

of the implications of our space projects on our military programs. Much of our effort, as well as an ever increasing amount of our funds, is going into our missile and space programs. Under budget ceilings it is inevitable that increased effort in this area will cut into other programs of the services. What are the effects of such activities? Perhaps some of the experts who will talk to us on these programs will be able to be specific in the details in this regard.

In the study of materiel management, it is essential that we understand the industrial aspects of our national security. The economic implications of our military programs and the budgetary support and time phasing which these programs require put our decision-makers in the business of evaluating industry's capabilities and responsiveness to our programs. You must remember, it takes a long time to produce military goods, regardless of industry's capability.

During the conduct of this unit we are going to study in considerable detail twelve of our major industries, and you will be required to submit comprehensive committee reports concerning the particular industry assigned to your individual committee.

Each committee will make a one-day visit to an industrial facility that will be directly associated with the committee report I mentioned. Then, at the conclusion of Unit IV, the industrial field trips will be conducted throughout the United States, and in one instance will include some Canadian facilities. The industrial field trips are designed to provide a first-hand opportunity to observe and discuss with industrial leaders of stature current conditions,

trends, and influences within industry and their influence and impact upon the economy of the Nation.

So, during your study, your talks with the top management, and your visits to the plants, I am sure that you will get a good idea of the capability and functioning of the industry. Some factors that will be worthy of your note during this phase of the course will be scientific and technological advances as related to industry, advance production techniques, automation, quality control, lead time, and the implications of labor-management problems. The adaptability of our current production base to various conditions of expansion under different emergency conditions should be investigated thoroughly.

These industrial field trips are especially important, since they provide the opportunity for you to obtain first-hand knowledge and background that will also serve as a basis for making comparative judgments of industry, management techniques and procedures, labor-management relationships, and government influence during the subsequent international field trips.

That technological revolution I spoke about in the beginning of this talk has indeed brought about great changes in our weapons for war and all the aspects of their administration, support, and management. All of these are important to our national security. Military organization is not a complex part of our industrial security, and the positions of the military and the civilian are no longer sharply defined in our national life. Both of them have grave responsibilities in our national security.

If we are going to control our destiny, if we are going to enjoy the freedom

of action and the confidence that we have had before this technological revolution, the materiel manager is going to have to rise to new heights. We must keep abreast of the changes that are continually taking place in the operational fields. How can we do this? Perhaps first by knowing and doing our jobs well, and perhaps by subjecting our administrative and support problems in management to the same type of research that our scientific and operational problems have undergone.

In closing, I hope that I have touched on enough of the facets of materiel management to instill in your minds the need of good materiel management as a part of our national security. I hope I have been able to show how Unit IV is one of the building blocks in the final product of your study here at the College.

Mr. Borklund, Publisher of the Armed Forces Management Magazine-- and we are fortunate in that he will speak to the class tomorrow--is the author of an editorial that is appropriate to our subject. I will paraphrase it for you.

Farsighted military officers have long contended that no amount of ordering is going to create hardware if the business side of the operation is half asleep and riddled with roadblocks. Few commanders will have a prayer of winning wars or of keeping the peace if the support side of the operation is not kept up to date. How effectively we manage our available resources and how we reshape them to meet present and future challenges are going to determine almost entirely whether we survive or not.

Gentlemen, I can only say that I heartily concur with Mr. Borklund and

that the ~~defense-industry team~~ must function as one in all respects if we are to keep pace with our advancing technology. We hope that Unit IV of your course here at the Industrial College helps to bring that about as each of you individually may be concerned.

Thank you. This concludes this portion of this morning's schedule.