

DETERMINATION OF REQUIREMENTS--ARMY
24 January 1946.

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GENERAL ARMSTRONG:

Gentlemen, the speaker this morning did not spend much time in the United States during World War II. He was back here in July of last year in the Requirements Division; but the way he learned about requirements was to help fight a war in Africa, Sicily and finally in Europe. He headed a regiment of Army Engineers, and Engineer combat group in the European campaign. His experiences in the war would be far more interesting and entertaining to listen to than hearing about a dry subject like requirements.

And yet, gentlemen, that subject of requirements is one of the things that, it seems to me, we can blush about most justifiably in the field of our industrial mobilization. I knew about the receiving end of the requirements business. After I would visit a factory and would address the laborers and the management and tell them how important their work was, the next day in would come a telegram or a telephone call from Washington saying, "Go and tell them the contract is canceled." Then a few weeks later, when everything had been torn down, there would come another telephone call saying, "Well, we are sorry, but we have changed our minds. We want three times as much produced by that factory."

These are true stories, gentlemen. I am not giving you any apocryphal statement. That happened in any number of cases.

There are lots of things to be learned about requirements, that go back into the philosophy of warfare--the kind of stuff that Dr. Rosinski was telling us about yesterday. One of the things we want to teach line officers and the General Staff, and even beyond that, the civilian people who make up our political objectives and what not, is what they do to the end of the line in the factory when they change their minds or cannot make up their minds as to what we are going to need with which to fight a war.

That is what Colonel Daley will talk about today. He is here to talk about the mechanics of the requirements business within ASF. Gentlemen, it is a privilege to present to you a distinguished soldier, Colonel Daley, who graduated from the Military Academy in the class of 1928. Colonel Daley.

COLONEL DALEY:

Gentlemen, when they called for me to talk on this subject I wondered why they had selected me to talk about supply. But I am sure that, while my experience has been limited in duration, it has been very highly intensive over the last six months. In fact, some more combat work might be preferable to some of these supply fights that we have had during this emergency.

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While my subject is the determination of requirements, because of the limitations of my experience, I will confine myself to a discussion of the determination of requirements for those items for which the Army Service Forces have the responsibility of supply and issue. The Army Air Forces supply and issue certain items peculiar to their own needs, and have developed a method of determining requirements better suited for their particular problems. I am going to confine myself to the broader aspects of the subject because there are going to be at least two more speakers who will go further into the details of the exact mechanics of some of these elements which I am going to discuss.

Since a major purpose of the discussion is to benefit from the lessons of World War II, I will describe the system in effect at the close of the war. This system represented the result of continuous evolution in the light of war experience. In other words, it represented a constant effort to improve the system and to eradicate, at least at the technical service and ASF staff level, those changes, those delays, those switches, of which General Armstrong has spoken. At the close of my presentation I will discuss briefly some of the modifications made in the system to adapt our wartime system to the present period.

It is important, in the beginning, for you to understand who has the responsibility for the determination of requirements for Army Service Forces items. That responsibility for the determination of requirements for an item is primarily and basically that of the Chief of the technical service which furnishes and supplies the item. In other words, the Quartermaster General is basically responsible for the determination of requirements for quartermaster items, the Surgeon General for medical items, the Chief of Engineers for engineer items, and so forth.

My division, the Requirements Division, is the office at the Army Service Forces staff level which has the responsibility for supervision of the over-all supply control system. On the War Department level, of course, the Assistant Chief of Staff, G-4, has over-all responsibility for supply policy. But the operating responsibility for the determination of requirements is basically that of the chief of a Technical Service.

The chief of a Technical Service has a Requirements Branch in his office which is responsible for the determination of requirements for all the items for that Technical Service as a whole. A great deal of the data is assembled, and in some instances the actual computations are made, at the Technical Service stock control points. These stock control points are located at various cities throughout the country. Each Technical Service stock control point handles supply control of a considerable number of the categories of items for which that technical service has supply responsibility. It acts as a focal point to which all depots handling these categories feed in their supply data and in like manner it directs and controls supply activities of such categories.

I will now continue my discussion by telling you the scope of the problem, the principles upon which our solution was based, the factors

entering into the determination of requirements, and the method and degree of control which is required.

I have attempted to set forth in graphical form the problem with which we are faced. That problem is to balance supply and demand at some projected time in the future. Remember that when you are dealing with the organization of industry, and sometimes with the building of actual facilities and the assembling of raw material and labor and all those things, this plan must be projected well into the future in order to secure such balance, because, as General Armstrong knows, otherwise there is a situation where you just start on one track and immediately turn around and reverse your field and three days later you go back to the original program.

These are some of the conditions that make these changes imperative: First, there are the various changes in the wartime size of the Army; that is changes in the troop basis. The composition of the Army changes; new weapons are introduced, and they may broaden the pattern of warfare, so that the composition of the Army has to be changed. It requires different kinds of supplies for troops that are fighting in New Guinea from those that are fighting on the fields of northern France.

The rates of expenditure and replacement factors change; they change approximately with the forces supplied. In other words, they are very much a function of the particular theater combined with the function of the amount of combat that is going on in that theater.

On the other side of the scales, to balance supply and demand, by increasing supply we have to go into procurement. There we immediately come into factors of supply of the materials; the supply of labor; the capacity of the production facilities; the amount that is already under contract as opposed to the productive capacity of the Nation; the production lead time and the necessity for plant development, looking always way out in the future to effect a balance of supply.

The problem was to bring under control, in the astronomic amounts required for an army of over eight million men plus the quantities required for other external demands, almost 850,000 different items, procured, stored, and issued by the seven Technical Services of the Army Service Forces.

The mechanism used to solve this problem is known as the Supply Control System. The mission of the system is simply to balance demand and supply.

I must give you this just very briefly, because you could not by any stretch of the imagination get all the ramifications of this program in the course of one short conference. But I do want you to carry away this picture of balance. This is what we are trying to do.

Here (indicating on chart) are our assets, our stock on hand, our returned stock, our receipts from procurement and assembly. On the other

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hand, we have our issue demands, our requirements for levels, and our requirements for reserves. Later on I will go into further detail on those. Those are the basic elements. We are trying to keep those in balance, and to keep them in balance not only today, but well in the future. (Charts for this lecture were not available for reproduction).

The supply actions we use to keep them in balance are by varying the quantities obtained from procurement and assembly, or from returned stock after repair. If we get overweighted on the supply side, we can balance the scales by declarations of surplus to reduce the assets and bring them in line with demand. In other words, we must attempt as best we can to meet all these requirements for issues and maintain our levels of reserve. Our demands are established by the War Department so we cannot effect that side of the scales. It is on the supply side we must operate, and we do it by procurement, by changing our repair schedule, which is a subsidiary form of procurement, or by surplus declarations.

To bring this desirable balancing result to pass, within the limits of practicability--and there again we are talking about covering a field of 850,000 items--two determinations had to be made: first, the computing base from which supply control studies would be measured; and second, the degree of refinement which could be applied to such measurement

In answer to the first problem we determined to measure all elements of supply and demand by their phased effect at the Zone of the Interior depot level. That is a very important point. There are other ways by which that could be done. You could add up everything out in the field, plus everything in the depots, plus everything in the pipe line, and try to measure that and balance it against the over-all requirements. The mathematical complexity of that approach and the time and effort required made it impracticable. So we took as the measuring base the phased supply and demand at the depot level and projected the supply control on that basis.

To give you two brief examples of that this means, let us take one from procurement and one from issue.

When we considered an item as an asset, to put into this side of the scales, we considered it an asset, not the moment it came off the assembly line and was accepted by the inspector at the facility, but, rather, at the time it reached the Zone of Interior depot and was picked up on the depot stock record as ready for issue. On the other hand, if we had a requirement for an item overseas, we did not put it into the requirement side of the balance as of the date that it had to arrive in the theater, but at the earlier time, at which it would have to be shipped from the Zone of Interior depot in order to get to the overseas destination and be issued on time.

This is a very vital point to remember, because it may be incumbent upon some of you to indulge in research and go into the supply control reports in detail. You must understand, when you do that, that the picture presented in our studies is the picture at the Zone of Interior depot level.

Having determined the base of measurement, it was necessary to determine the refinement to which it was practicable to carry supply control computations. I will go into considerable detail a little bit later on as to all the elements to be considered. But when we have to control 850,000 items, where some of them are very important, some of them of less importance, and some of them quite unimportant, to devote equal attention to each one would mean that we would have to impose an administrative burden that simply could not produce worth-while results in the time needed to arrive at the essential decision on supply action to be taken. We, therefore, took our 850,000 items and broke them into three groups: principal items, major secondary items, and miscellaneous secondary items.

The principal items, never more than 1,900 in number, were selected on the basis of: large stocks on hand, large future issue demand, large future procurement, the possibility of a critical shortage occurring, and the strategic importance of the item to the operations then in progress. By careful selection we picked out less than 1,900 items, as opposed to the 850,000-odd items (all of which we had to control to some degree). These 1,900 amounted to less than one-fourth of one percent of the total number of items; yet by applying the most detailed and refined control to those items, we maintained an accurate control on 60 percent of our stock on hand, 78 percent of our issues, and 77 percent of our future procurement.

We then proceeded from those principal items to the major secondary items. We reviewed these items almost as frequently as we did the principal items; but the details of the review and the various elements that entered into it were on a much less restrictive basis. We did not go into every single element of the supply position of major secondary items.

When we took those 40,000 major secondary items, we found that, together with the principal items, we were still putting our major emphasis and control on only one-twentieth of all of the 850,000 items; yet by the selection of these items we had taken care of about 80 percent of the stock on hand dollar-wise just short of 95 percent of all our expected issues, and a similar proportion of our future procurement. In other words, this was a selective method of attacking the subject, putting emphasis on the important items and leaving the relatively unimportant items to a very limited control.

Finally, we had the balance of over 800,000 items, which received less attention and more infrequent review. There we did have a definite lack of control as opposed to the principal and major secondary items, but that control only affected about 20 percent of our stocks and represented only 5 percent of our total procurement program.

Now we will go somewhat in greater detail into the various elements that I showed you on both sides of the scale.

These again (referring to chart entitled "Elements of Demand") are the elements of demand. Remember, those are the elements upon which the supply service can exercise no effect except the very negative effect

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of sometimes saying that it cannot possibly supply it, which is the last result we wish to achieve.

Just remember again, to start with, that we are measuring at the Zone of Interior depot. The first item which comes in is the "current unfilled demand", which is a requisition on that depot which has not been filled. That is a present demand. Every other demand is a future demand. An unfilled requisition on the depot is a present need. That is why we put it first. So we have to start out with that as our first element.

From that we proceed to the issue demand. The measure of that, naturally, as you would expect, is the U. S. Army Issue Demand. It is obtained by a series of computations based upon documents, which emanate in the War Department, at General Staff level and represent the combined efforts of G-3, G-4 and the Operations Division. We receive the troop basis and troop deployment, which show the strength of the Army, the breakdown into units, and the general allocation into areas. That shows you what units are going to need the material.

We frequently require modifying instructions. In other words, with limited supply we may decide that one theater will receive all that it has asked for, while another area will be given only a limited amount of equipment because that is all that can be transported and utilized in that area. Those modifying instructions are found in a document prepared by G-4 of the General Staff known as the Supply Supplement.

So, taking together, the troop basis, the troop deployment and their interpretation for supply purposes established by the Supply Supplement, that is where our basis for the U. S. Army Demand originates. These instructions emanate from the War Department General Staff, and pass through Headquarters, ASF to the chief of the Technical Service who is responsible for the computation of requirements for items.

That requirement is broken down in another way--into initial equipment and maintenance. Where we are issuing a new or improved weapon for the first time, we obviously have an initial and one-time demand to place sufficient quantities of that weapon in the hands of the troops authorized it by Tables of Equipment.

Once the initial equipment is in the hands of troops, we have a subsidiary requirement, which is a requirement for maintenance to replace the combat losses and normal wear and tear thereafter on the item. That is a maintenance demand. This maintenance demand is determined by applying to the quantities of equipment in use a factor known as a replacement factor, which could form the basis for quite a considerable discussion in itself. But you can get the broad picture. You take the items in the hands of troops and apply against that a "wearing-out" rate. Consumption experience comes back from the theaters and from the service commands; from it the Technical Services develop a rate at which material in use has to be replaced; and in that we have our "maintenance demand" for the supply of troops in the field.

Where it is vitally important, such as in the case of major combat equipment, the War Department itself approves these replacement factors. On many other less vital items, the chief of the Technical Service himself approves it, and proceeds automatically to use it in the determination of requirements.

The phasing of this demand, the U. S. Army Demand, was as determined by the troop deployment and the troop basis, with a correction made for the timing to place the demand on the Zone of Interior depot, in time for the depot to ship so that it could be issued at the right time and place.

Now, going down into this element, U. S. Army Demand, we broke that down into Zone of Interior demand and overseas demand, because particularly in the case of maintenance factors, the consumption rate, the wartime rate, would be entirely different in the Zone of the Interior from that in the active theaters. So we broke the U. S. Army Demand down into our Zone of the Interior requirements and overseas requirements, excluding operational requirements.

The reason we segregate the "operational requirements" from others is because these are one-time demands. We had a special task force to equip or a special installation to contract at a certain place at a certain time. These are not recurring demands. They are not demands related to the strength of the Army or the organization of the Army. They depend upon performance of specific tasks or operations. Bills of material or special lists of equipment for those operational projects came to the chief of the Technical Service in the form of War Department approved operational projects which spelled out what supplies would be set aside for that purpose.

Now, that covers the basic Army demand for equipping troops. For our supply function we had another demand. Many items which we control are not the final items that troops use. They are items furnished to manufacturers to be further manufactured, or to have processes of modification performed on them before they are finally issued for use in the field.

Take, for instance, a flame-throwing tank. The Chemical Warfare Service would need a certain number of flame-throwing tanks. Ordnance would include in its requirements the number of regular tanks to be converted to that purpose. That is a requirement for "conversion or modification."

Then there were other requirements, including those of bulk transfers to the Army Air Forces. For items such as regular clothing, items used alike by air and ground troops, AAF requirements were included in the general computation of U. S. Army issue requirements. Certain other items were procured by the ASF and transferred in bulk to the AAF. Such bulk transfers were carried as separate demands.

Then we have a demand for civilian supply. In liberated and conquered territory the Army normally had the responsibility for

civilian supply for considerable periods. We had demands for the civilian supply for such areas, which had to be met from Army stocks, and hence had to be included in Army requirements.

Then there were items which the Army procured, but which both the Army and the Navy supplied and issued. We received the demands from the Navy. Those were obtained through the Requirements Division of the Army Service Forces and then transmitted to the appropriate chief of service.

Then for the last important wartime demand we had the requirement for the demand for international aid. Those demands were worked up and approved by the International Division of the Army Service Forces and then transferred through the Requirements Division to the Technical Services.

Finally in wartime, when the Army and the Navy are practically taking the bulk of all production of many items, there are certain nonmilitary demands that are absolutely essential to the immediate prosecution of the war that must be met. In certain cases the Army and the Navy were given the responsibility of helping to fill those demands. Typical of such demands were those of the Federal Economic Administration for certain supply work overseas, certain demands for UNRRA, and demands for the Red Cross for its activities connected with military operations.

Those cover all the basic elements of demand that the chief of the Technical Service had to consider when he wanted to come out with an accurate answer.

Finally he had to look at still another factor. If he had a preferred item of which the supply was inadequate, and another available item could be used as a possible substitute until the supply of the preferred item caught up, the requirement of the available items "as a substitute" had to be added to the other demands for it.

Then in the second major category we had levels and reserves. The first of those was the equipment reserve. During the latter part of the war, in order to take care of contingencies that might arise in the over-all war picture, we maintained a reserve of supply for a certain number of troops in the United States. This represented equipment for a certain number of divisions. The divisions were not activated nor was their mission assigned but this equipment reserve was held so that it could be immediately issued to an activated force to take care of some contingency in the world-wide picture.

The second level of reserves is what we call the stock level. It performs a function in the supply system similar to a distribution reservoir in a water supply system. After all, you cannot come up absolutely accurately with all the demands for all supplies and say just exactly what you need. There must be a little leeway to adjust for shipping time and order time, and in the case of quartermaster items for variations in sizes. So we were forced to keep a level, usually in Zone of the Interior operation from 60 to 90 days. That is an additional demand for a reservoir of materiel to equalize the outflow.

Finally we had the true reserves. The basic one in time of war was the production reserve. We tried to avoid that as much as we could because it involved building up stocks in advance of the time they were needed. This ties in with the point General Armstrong brought out, about the fact that we should try not to cancel contracts abruptly, but should keep the procurement and the demand in constant phase. In some items although supply and demand were in balance at the end of the period, at intermediate dates they were relatively off balance. Then situations would arise where an item would be suddenly decided to be of no further use. If we had over-procured early in the period we might have a large stock on hand. That was obviously undesirable.

In individual cases, however, it developed that we might have to have a production reserve. For example, in the case of certain items it might be necessary to buy large stocks at one time even though the immediate requirements were not so large. Maybe that production cannot be spread out over a considerable number of months. As another instance, we might look ahead and see that we would have a very large future demand for ammunition of a certain type. If we ran our factories or our facilities at a greater rate of speed but within their present capacity, we could build up a reserve stock; so that at a future time, when the higher demand materializes, we would have the stock to meet it and would not have to build additional production facilities.

Sometimes, just purely for reasons of economy, where items are fairly certain to be required in the future and the possibility of a change in the requirements is remote, it might be more economical dollar-wise to buy a considerable quantity now rather than spread the production out over a long period.

All of this covers the right-hand side of that chart, the elements of demand. We will now turn to the left-hand side and look at the elements of supply.

To fill up the left-hand side of the scale we start off first with what there is in the depot stock on hand ready for shipment. Then there is returned stock. That is broken down into two types: Serviceable without repair, which represents supplies shipped back to the depot in usable condition, and returned stock after repair.

This involves careful study of phasing. Troop units are shipped overseas without equipment, getting different equipment overseas. We must have that new equipment there on time so that it can be issued to them. Whereas the equipment they left in the U. S. only becomes an asset when it reaches the depot.

Secondly, if we are in relatively short supply of an item and we obtain not only those items ready for issue but returned and requiring repair, it is necessary to anticipate the repair schedule on those returned goods. There we have to be involved in the time that it will take the item to go through the repair schedule in the shops and finally get back into the depot system.

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Then when we have a great demand and an item is in critically short supply, we plan to use substitutes. So we have finally to determine what substitutes we have available as assets in our supply.

Then toward the latter part of the war, and more important in the European theater than in the Pacific theater, we had a very large element of supply, which was the return of overseas excesses in a theater when an area was closed up.

Then finally if the scales will not balance, and we still have a preponderance of demand over supply, we come down to our last balancing action, which is receipt from procurement and assembly, in other words, what we must buy. That, of course, must be phased in time for it to reach the depot.

Every one of these factors are taken into consideration in the case of principal items. The results are integrated in a phased supply control study, which is submitted monthly by the chief of the Technical Services to the headquarters, ASF. Those studies are studied by interested staff sections. Then they are subjected to a formal review meeting held under the auspices of the Requirements Division.

I realize that you cannot read that blown up chart of the Supply Control form from where you are. I am glad of that, because the only impression I want you to receive from this highly-colored chart is the multiplicity of lines and the multiplicity of columns involved, because that is the putting together of all the things I have been telling you about in this supply and demand setup.

In the left-hand columns we have data on what has happened to the item in the past. So we have some guide by which to measure our future predictions. In the right-hand columns are our phased future estimates of demand. Below, with the same columnar breakdown by periods are the various elements of supply. At the bottom is the program for procurement that we are going to go into in the future.

The point I want to bring out is that to get close control of an item, this refinement of computation must be accomplished. That is why we made our supply control of our principal items very strict. (Just as a matter of interest, it might be well to mention how the various other staff divisions have to be integrated into a consideration of the requirements).

The blue on the chart represents the field of responsibility of the Requirements Division. The yellow is that of the Distribution Division under the director of Supply, because he is interested in stock status short items and demand; the red area, that of the Production Division, because it is interested in what we must produce, what we must meet; the double cross hatched area that of the Research and Development Division, because it gives its advice and assistance on whether we are doing the proper thing in procuring the item or should substitute something for it; then the cross hatched areas in red show the responsibility of the Planning Division, which is fundamentally concerned with

the operational projects from overseas; the International Division, concerned with international aid elements of demand; the Maintenance Division, concerned with what we are going to expect them to do with the returned stock; and the Fiscal Director, who is concerned with how much this whole project is going to cost.

At the time these revised studies are approved, they are published in MPR 20, the supply control report. At that time the need for additional programmed procurement is determined, and the approval of this supply form, MPR 20, is authority for that programmed procurement.

Secondary items are handled in an entirely different manner. You can look back at this chart here and you can just see the scope of the investigation that has been done on these 1,900 principal items. Our supply and demand studies on the secondary items are not planned to cover this complexity of detail. A short form record is kept of previous issue and current stock status. It shows what we have issued over the last six months or the last year and what we actually have on hand at the present time.

Our future requirements are determined by examining past experience, discounting the effect of nonrecurring demands wherever they are known, so we will not have a distorted picture, and inserting a judgment factor on any recent changes in troop structure. Knowing what the average monthly issues have been, by taking these points into consideration, we arrive at an estimate of future monthly issues.

We can correct our estimates by looking at the major secondary items each month and seeing how close our guess on future shipments has come to the actual shipments. The procedure is exactly the same for both major and secondary items. The difference between the two, that is, the difference between the way in which we handle the next 40,000 items and the last 800,000 items, as between the major and secondary items, is that, for the major secondary items, we make this review frequently, once a month if we possibly can, whereas in the final 800,000 items we touch them lightly, only once in a considerable period of time, possibly once every six months.

This control of secondary items at the ASF level is based on the fact that we cannot have all the items come to us individually. Our control of secondary items is based upon dollar value categories rather than upon item studies.

Items of related use, procurement implications, and similar supply characteristics are grouped into major secondary and miscellaneous categories. Pertinent supply data on past issues, current unfilled demand, stock on hand, future issues, and future procurement are computed dollarwise by items at the stock control points. The data for items are then consolidated into categories each of which might consist of a few items or fifty items, or five hundred items. The categories are then submitted in the monthly progress reports of the MPR-19 series.

The dollar-value category is a management device to focus attention on sources of possible trouble. If we look at the whole category and see that in the past we have been having small issues and in the future we have large predicted issues, that the stock on hand has been constantly rising, and we seem to be procuring to meet these bloated future issues, it strikes us immediately that it will require some detailed investigation. On the record the category manager has been guessing wrong in the past or the stock would not be rising. There is no apparent reason for any excess in the future; the future demand is larger than past experience would justify and procurement is continuing. So the best answer at that time is to effect a detailed investigation of that particular category. That is done by going to the supply control point at which the category is managed and there examining individual items in that particular category to determine the source of the trouble. So the dollar value category system merely gives us a broad picture and gives us an idea where the trouble may be, so we can take the limited amount of corrective action that can be done, by going to the sources of trouble and digging down into that particular category. The important thing to remember is that while we make the survey on a category basis, we can take only corrective action, item by item.

In summation, I want to review the salient portions of Determination of Requirements, Army.

First, the responsibility is basically that of the chief of Technical Service concerned, who operates under the over-all policies prescribed by the Assistant Chief of Staff, G-4, and under the direct staff supervision of the Requirements Division, Headquarters, ASF. Second, the system for determining requirements is known as the supply control system. This system is predicated upon two basic principles, (a) it measures supply and demand in terms of their impact upon depot stocks in the Zone of Interior depots and (b) it varies the frequency and refinement of determination to the importance of the item. Third, the results are disseminated in two monthly publications--MPR 20 for principal items and MPR 19 for secondary items.

Just so that you will be remotely familiar with these formidable documents, here is MPR 20 for just one Technical Service. It is not the largest, which is Ordnance. But that is the monthly progress report on principal items of Engineer supply. This is the secondary item. This is the Monthly Progress Report, No. 19. This embraces all the Technical Services.

As I said in the beginning, I have given you a brief picture of the supply control system as it was at the end of World War II, representing the results of our wartime experience. The question naturally arises, What are the future changes that could be made?

To begin with, of course there is one change that we would make. As General Armstrong brought out in the beginning, the supply services cannot change requirements. But if you officers from other commands take home with you an idea of the complexities that are involved in a

change in requirements, it would be of great advantage, because you will exercise some dampening effect on sporadic changes, to be very sure that you want them before you start this intricate machinery in motion.

We need more attention to identifying items. It is my considered opinion that we might well reduce by as much as a third or a half the total number of 850,000 items if everybody called those items the same names. We found a single item with as many as four different names in seven different Technical Services. That is the basis of our present studies on cataloging. Our efforts in this direction are merely starting. We cannot say yet how much improvement we can make in the cataloging system, but it is one of the most profitable fields for postwar development.

Throughout the war we were plagued by questionable inventory figures. Since that is a basic figure on which we have to compute supply, we must continue to revise our procedures in getting better inventories more rapidly.

We never fully refined the problem of getting good figures on returned stock. That is a subject on which we need considerably more study. There was a tendency to over-procure because we did not dare to rely on our projected returns.

This dollar value category report could be improved and made even more simple by tying it in better with the actual records kept by the Technical Services which are ultimately responsible for supply and distribution.

The basic supply system is well adapted to serve its mission. We have continued it to the present, although our emphasis is on determination of surplus rather than on need for additional procurement. Our restricting factor is not productive capacity any more, but how much money we get. Some requirements have lost their importance as elements of demand, while new ones have entered the picture.

We are reducing the frequency of reports in consonance with limited personnel available for work. But the system itself remains substantially unchanged and ready for expansion if the occasion arises.

Are there any questions?

A STUDENT:

Colonel Daley, as I see this whole supply control system at present, it is based on a growing institution. By that I mean that we have stabilized troop basis. We have production facilities operating and going. We have established depots. I understood one of your last remarks to be that this system will be utilized in the initial stages the next time. How is it going to be utilized in the depots for production until the troop basis is stabilized?

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COLONEL DALEY:

That is a good point. I will say that while stabilization of the production facilities at the present time is desirable, we cannot put our finger on them from week to week. They are imponderables.

I would say that essentially a system is necessary where we bring together in one place the best available data on the effect of these factors. The question will arise when there may come a demand that we have no facilities to meet. Or we may come up with a supply schedule that we want to get rid of. But we must have a system to determine what that demand and what that supply are before any action can be taken on it.

A STUDENT:

That is what happened the last time. There was no system at all. But the system you just described looks to me like one that is based on stabilizing a growing institution. We do not know the specific items. That is the whole point I am trying to make.

COLONEL DALEY:

My subject is confined to requirements and not how to meet the requirements once they are established. I think there must be a procedure for determining what the mission is. The supply control is to determine what the mission is. I did not go into great detail on cutting across to what can be done to accomplish the mission once defined.

A STUDENT:

You want to know what the demand is. How does this present supply control plan figure on finding out what the demand is at the beginning of the next war? I mean at the very beginning, before the declaration of an emergency?

COLONEL DALEY:

That is done by computation of the demand at the present time. No one knows what the war requirements will be the next time. What we know is the mobilization requirement. That is a separate discussion.

There is such a computation of demand at the present time. We start out with an assumed M-day force. An assumption is made. We may disagree with the assumption if we like. But we start by assuming that we will have an M-day force of a certain number of troops. Then we project that plan to M plus twelve months, by which time there are planned to be two and one-half times the original number of troops; and we have computed what is required to fill out the equipping and maintenance of the troops in the intervening period.

Then from that we can subtract what the productive capacity of the country will be to meet that. In the initial stages it will be short.

Later on it may exceed the requirements. The difference between those two, between what we need during the first eighteen months and what we estimate we can obtain from production in the same period, is known as the mobilization reserve. Within limitations we are endeavoring at the present time to put that reserve demand in the supply control system and hold those items until the next time.

Now, that is the theory. The practice is subject to a great many differences. If you are thinking of a future M-day, how many weapons that we have today will be in existence then? In many cases it may be undesirable to hold them.

We are under great pressure to release items which are useful in the American civil economy at the present time. A board of officers was appointed, the Hodges Board. I do not know whether you have had a reference made to that board before. It was headed by General Hodges, the commander of the First Army. That board recommended that so far as an item is suitable for civilian use we not retain any army stock beyond the requirements of the Army up to 30 June 1949. That was approved and that is in effect, to be carried out at the present time by disposition of all surplus in excess of that.

The effect of that is going to be quite an unbalanced war reserve, because it is quite as important in many respects, thinking purely from the standpoint of a war reserve, to have shoes, for instance as it is to have rifles. Shoes are just as important an item to have in reserve as any other. But at the present time we are doing away with all shoes beyond those sufficient to carry the Army up to 30 June 1949. But we have not neglected the problem of theoretical requirements. We are computing the requirements, and we have had those computations approved in the supply control system.

A STUDENT:

In your talk when you spoke of the number of items covering 78 percent of the procurement, what did you mean?

COLONEL DALEY:

Dollar value. I should have emphasized that. It was bulk dollar value.

GENERAL ARMSTRONG:

You said something about the multiplicity of items that are procured by the agencies of the War Department. What is being done relative to that situation? Are you doing something about it within the ASF?

COLONEL DALEY:

In the case of principal items that does not obtain.

GENERAL ARMSTRONG:

I know. But I am speaking about the other hundreds of thousands.

COLONEL DALEY:

You can assist it definitely by making one Technical Service responsible.

GENERAL ARMSTRONG:

In order to bring down the number of items being procured you said that you thought it should be broken down into half the number.

COLONEL DALEY:

That is going on consistently. But it is a long, time-consuming job when we get down into the realm of odds and ends.

GENERAL ARMSTRONG:

Do these 850,000 items include spare parts?

COLONEL DALEY:

Oh, yes.

GENERAL ARMSTRONG:

Does that number include final spare parts or unit assemblies?

COLONEL DALEY:

It gets right down to the final spare parts.

We are attacking it another way too. In the beginning stages of the war, before this system was in effect, there was a great tendency to buy everything we could buy, although we might have no use for them. In these 850,000 items there were probably several hundred thousand items which we would not buy now if we had a chance to know that they are identical with something else. We are having the Technical Services go through the lists of their items and determine what are known as unauthorized items. In the cases of those unauthorized items we are disposing of odd quantities of those items. So that is proceeding to whittle away the number.

Secondly, when we get down to what are called authorized items, we know in the principal items definitely which technical service buys and which supplies each of those. We set them up in a proper document. That we break down into secondary items.

But the reason I say there is need for getting into a cataloging system is that we know two or three different Technical Services call

the same item by a different name. Until we identify the item distinctively we do not know exactly what it actually is. That is why we are cataloging everything. We are now making a separate division for operating that.

A STUDENT:

May I put in a word here. There is a committee on standards that I have sat on a number of times with the Navy and the Army Air Forces, where we all get together and agree on names for things.

COLONEL DALEY:

They are doing a similar thing in the realm of medical things. There is very close correlation between the Army and the Navy and the Surgeon General's Office.

It is a tremendous thing. I have a feeling that by proper identification a third of all the items might be cut off. I also have a feeling that if the right kind of corrective action is applied only about 200,000 items altogether would be needed; in other words, one-fourth of the number at present. Judging from the results that have been achieved already by the Ordnance and Engineers cutting out their unauthorized items and identifying things properly, just projecting into the future my own guess, which is a calculated guess, I think we could do with about one-fourth of the total number of items that we are handling at present. That, of course, is of vital importance to me, because the fewer the items, the greater the degree of control on each item and the less chance of over-procuring and stocking all the time.

A STUDENT:

My office in Chicago has reduced our items carried by one-third.

COLONEL DALEY:

Most of our calculated guesses do not come nearly that close. It is remarkable.

A STUDENT:

You spoke a great deal about meeting the demands of the Army. I have been thinking more particularly from the standpoint of the officers here. I was wondering if maybe you would touch on that subject from the standpoint of your present position as Director of Requirements. I have reference to the great clamor that comes from the theater. In getting supplies over to the theater they have agreed already that once they get those supplies, they are frequently out of balance and there is not the same stimulus to get them back into depot channels. I think we became aware of that condition late in the war, and I do not think very much has been done in planning against it.

COLONEL DALEY:

There was a stock-control system mainly set up for the theaters to operate on, with the idea of simplifying our procedures and getting something of this general nature in the theaters. I think your point is well taken. I am more in the position of an observer. I do think that it is obvious to those of us who were over there that there is a degree of lack of refinement that you cannot avoid in fighting a war. The same philosophy can be applied to the other determinations of requirements.

In the Pacific I think we were able to do much better. They set the requirements there beforehand, projected on the Japanese operations, and took out possibly a half of the people who were working on those requirements in Washington and set up some kind of system out in the Pacific. Of course there was a limit to what they could possibly do there, because there was only a certain amount of shipping there; and when something is put in, something else is dropped out of priority.

Then there is the other point to discuss, as to whether there was an impetus to get down to the troop level in the theater. This is a field that is very well worth studying to see if it could be improved. After the war ended in the European theater it was extremely difficult for the services in the theater to extract anything for the army depots. I could go on and discourse about this at great length, but I can only say that the services over there reported that they had great difficulty in getting things back from the Army. So where one theater is going out and a new theater is opening up, we are going to have a system that will do that sort of thing.

A STUDENT:

It seems to me that we have to work the thing in reverse; that where in the supply function the theater clamors to the Zone of Interior to furnish those things, the Zone of the Interior at the top has to focus attention to get this excess material into use. The one at the top has a tendency to only do something about it when he starts falling over the stuff or when it becomes an encumbrance. It seems to me that the Army ought to do some of that in its own house. A good bit of the impetus is done from the top side in the Zone of Interior.

COLONEL DALEY:

It did come from the top side in the Zone of Interior.

A STUDENT:

It was not a continuing thing. I guess it was more or less a one-shot proposition.

COLONEL DALEY:

No. That went on during the period when they wanted a redoubled effort against Japan. They wanted the European theaters to report all

items which were beyond the new theater troop basis. It resulted in the theater making supply control computations in reverse to determine the excesses. The theaters came in with excess reports, and from those excess reports shipments were directed to the Pacific. But it did not last long enough to find out whether it was really operative or not. It might have if we had put the pressure on, but time was running too rapidly, except that in these principal items pretty rapid determination can be made. But when we get down into what we actually need in these miscellaneous secondary items, it is a long-continuing process.

COLONEL BROWN:

Colonel Daley, on behalf of the Commandant, who was unable to remain, I wish to thank you for giving one of the most thoroughly interesting lectures on one of the most difficult subjects that we have had at the College, for which you are to be complimented greatly.

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