OVERSEAS DISTRIBUTION SYSTEMS

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Captain Henry E. Eccles, USN, Head, Logistics Department, Naval War College, was born in Bayside, New York, on 31 December 1898. He was graduated from the U. S. Naval Academy and commissioned Ensign in June 1922. He became a qualified submarine officer in 1925 and received postgraduate instruction in Diesel engineering at the Post-graduate School, Annapolis, Maryland, and Columbia University, 1928-1930. He commanded the destroyer John D. Edwards from October 1940 until March 1942 and participated in the naval actions against the Japanese in Badung Strait and the battle of the Java Sea. From May 1942 until June 1943 he was on duty in the Office of the Chief of Naval Operations. Following instruction at the Naval War College, he reported for duty on the staff of the Commander, Service Force, Pacific Fleet, in December 1943, as officer in charge of the Advanced Base Section of the Pacific Fleet Service Force. In December 1945 he was ordered to the Army and Navy Staff College, Washington, D. C., as a member of the Joint Operations Review Board; and the following July he assumed command of the USS Washington. In January 1947 Captain Eccles was ordered to duty on the staff of the Naval War College at Newport, where he is now serving as Head, Logistics Department.

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GENERAL HOLMAN: Gentlemen, for the past three years the Industrial College has received annually an invitation from the Naval War College, up at Newport, to present--through lectures, seminars, and discussions--some information on the problems of economic mobilization to the student group at the Naval War College. We have always been very glad to accept these invitations. The exchange of visits has resulted in great benefits to both colleges.

On our trips to Newport we have not only had the advantage of learning many interesting things about naval logistics but we have also met some outstanding officers and made some very fine friends. One of these gentlemen whom we have seen up there in action on logistics, strategy, and tactics is with us this morning. As our guest speaker he will talk on "Overseas Distribution Systems."

Captain Eccles is the head of the Logistics Department--I think its new name is Strategy and Logistics--at the Naval War College. He has made great contributions to clarify our thinking on the relationship between strategy and logistics. In his work up there since 1947, he has done much to straighten out the "why" and the "how" of the relationship between strategy and logistics.

I know Captain Eccles has many friends in this audience this morning. We feel very honored to have him with us. I extend to him a very cordial welcome to the Industrial College.

Gentlemen, Captain Eccles.

CAPTAIN ECCLES: Admiral Dyer, General Holman, my friends at the Industrial College, and visitors: In addition to the relationships that General Holman has described, the Naval War College and the Department of Logistics at the Naval War College are particularly indebted to the Industrial College because at the time the present Strategy and Logistics Course was under consideration, and in its formative period, we received invaluable help from the officers of the Industrial College. Some of our ablest staff members have been officers who have come to us from the Industrial College. We have received great benefit from this mutual association.

Before discussing the subject of distribution, I want to pay tribute to the military educational system of the armed forces. I think it is swell. And I think you are all to be congratulated on being members of one of the major elements of that educational system.

At the risk of "pulling an old chestnut," I have been called a logistics planner. Some people talk about what a logistics planner is. But I will offer this: "A logistics planner is a person who passes as an exacting expert on the basis of being able to turn out with prolific fortitude infinite strings of incomprehensible formulae calculated with micromatic precisions from vague assumptions which are based on debatable figures taken from inconclusive experiments carried out with instruments of problematical accuracy by persons of doubtful reliability and questionable mentality for the avowed purpose of annoying and confounding a hopelessly chimerical group of esoteric fanatics referred to altogether too frequently as practical navy administrators." There is a lot of truth in that; but it is not the whole truth.

Today we are going to discuss distribution, which is a part of logistics. However, it is impossible to discuss distribution or logistics without reference to the broader background of war; the relationship to the bigger entity. The word "distribution" is a verbal abstraction. In other words, you cannot take distribution in your hands and put it in a box. It is an abstraction. It cannot be defined precisely.

In the same way the words "war," "logistics," "strategy," and "tactics" are all verbal abstractions. I believe that in many instances we, both the armed forces and the public, make a mistake in attempting to give very precise definitions for these various elements of this great and complex subject of war. I think the attempt to make precise definitions in reference to these abstractions is unfortunate for it tends to create compartmented thinking. I will start with a very brief suggestion to you of certain abstractions which I think are helpful in understanding the reality of war, giving a demonstration or description of what war is rather than an exact definition.

When we come to writing operational plans, giving orders or commands, we must be precise. We must have words that mean precisely what we intend them to mean. We have to be accurate. But in the case of understanding the abstract there has to be room for a tremendous number of different thoughts and feelings. If we can give good descriptions rather than precise definitions, I think we will attain a truer understanding of what we are talking about.

Chart 1, page 21.--Let me start out with a one-picture concept of war. In this slide you will notice that if you remove any one of these three rings, the other two will fall apart. I believe that is a pretty good representation of what happens in war. If, in your thinking from the command point of view, you do not subconsciously relate the strategic, logistical, and tactical elements of that situation, your thinking is going to fall apart.

Let us now take a very brief look at logistics, as portrayed in this slide. If we describe logistics in these terms, we find that we are describing it in terms of strategy and tactics. We are in harmony with the three rings that must hang together. And so, with the general definition that logistics provide the means for war, we can go ahead without being too compartmented in our thinking. And I think we can go ahead with a pretty firm basis of reality.

Chart 2, page 22.--To help us in understanding and discussing this intangible or abstract thing that we call "logistics," I suggest that we look at what we might call "Fundamental Elements and Basic Aspects." The fundamental elements you are all familiar with; you are doing those all the time. They are the determination of requirements, procurement, and distribution. All these are done no matter what else you are doing in the logistics work of any organization.

Then you must organize, plan, execute, and supervise. In every problem these elements and aspects are interrelated. They blend and overlap. They will be different for every problem. But, nevertheless, if you approach your problems of war logistics with these elements and aspects in mind, it will help you to keep straight on the path.

Chart 3, page 23.--What, gentlemen, are the means of war? As shown on this slide, they are men, materials, and services. Some of my friends think we should add a fourth one, namely, facilities; but I prefer to include facilities as a part of services. If we are providing the men, materials, and services, we must have the determination of our requirements; we must have procurement; and we must have distribution.

In your studies here in the Industrial College you have been very largely involved with the problems of procurement; that is as it should be. The problems of procurement, of course, stem from the requirements. We have the task--and it is a very important and difficult one--of meeting tremendous demands and requirements with limited resources. Since our economic and industrial capacity is not unlimited--it is never unlimited--we have the job of making our procurement suffice for our real needs by cutting down our requirements wherever that can be done.

Just as it is important to study all aspects of procurement so that we can attain the maximum procurement, it is equally important to study all aspects of requirements in order that we may reduce our requirements without reducing our fighting power. And in that problem of reducing requirements it is appropriate that we make a very careful study of distribution. I believe that in the study of distribution lies the field of thought that will give us the best means for reducing our requirements without reducing our fighting power.

Combat efficiency, while not solely determined by logistic efficiency, is always limited by logistic efficiency. Logistic waste, that is to say, logistic inefficiency, always reduces the ability of the commander to apply sustained combat power at the desired locations. On the other hand, an excess of logistic resources in one area means that combat operations in another area have been unnecessarily curtailed or delayed. No one proposes that the last bullet kill the last enemy; but all of us should realize that unnecessary excesses and unnecessary shortages are the two sides of the same coin of logistic inefficiency.

In a talk as brief as this, it is important to select the essentials. I shall skip most of the technical details, leaving these to your own knowledge. With the extensive bibliography in your library and discussions within your own groups, many of you are much better informed than I am on these details. I shall try to point out, however, a few of the major considerations and problems of overseas distribution. When I go into details, it will be from the point of view of the fleet, the naval forces, and the naval distribution system.

Before attempting to go into the problem of distribution, I would like to offer you a concept of what we might call the logistic snowball. I like this concept because it happens to express graphically what really happens in war. Inefficiency in one field begets inefficiency in another field. A chain reaction will set in. Oversupply of one thing will have a deleterious effect on something else. It will be like a mass of wet snow piling up very rapidly around a central core of one major inefficiency.

I think that snowball concept goes through all our logistics history. I know it did in the case of the various bases the Navy built during the war. That is one of the finest examples of snowballing I know. However, to illustrate I will give you a somewhat more restricted example of the snowball.

Chart 4, page 24.--This slide pertains to personnel. No matter what we do, all our work is going to resolve itself eventually into the problem of personnel. Let us assume we have a hypothetical advanced base and let

us assume two types of men to man it. We have, first, the Buck Rogers type. He is a well-selected, very well-trained and well-led man who has been properly equipped and is practiced in the use of his equipment. Joe Doakes, on the other hand, is a man who is just one of a large group of men, hastily thrown together, given a minimum amount of equipment--or perhaps no equipment--provided very little training and mediocre leadership.

Well, we have a job to do and suppose we assign 10 Buck Rogers or 10 Joe Doakes to do that job. The Buck Rogers boys in 10 days will each do 10 days of useful work. Because of their fine training and quality, their selection, and their leadership, they require a minimum amount of supervision and support. Very likely it takes only three supervisory men to keep them going. Your total personnel to accomplish a given task is 13. Whereas, on the other hand, Joe Doakes is of an indifferent quality; he has had bad leadership, bad training. Under such conditions it is likely that in 10 days he will give you only 5 days of useful worktime. Because of his poor morale and lack of training, he takes five supervisory men. And when you consider all the extra support and administration that poor personnel require, I assure you this is very conservative. You all know that from your own experiences. If you follow the chart and convert into terms of shipping, we find that if you are using Joe Doakes instead of Buck Rogers it takes you 2.3 times as much effort to accomplish your task. If that task is 5,000 miles away, that makes even more difference.

This is a hypothetical, theoretical situation, but it is an illustration of one of the aspects of the logistic snowball.

War is essentially wasteful. But because we recognize that war is essentially wasteful, we should not fail to take advantage of every opportunity to avoid unnecessary waste.

If you think I may be overemphasizing something, I want to tell you of a little incident that took place about two months ago. I met a very good friend of mine, an officer who has been involved rather deeply in planning work. I was commenting to him that from the reports I was able to get from Korea it was evident that the armed forces were repeating many of the mistakes we made in the African campaign, in the early days of the South Pacific, and the Gilbert and Marshall Islands campaign--all the things we did wrong in 1942 to early 1944.

All of those mistakes had been analyzed and written up and most of them had been corrected by late 1944 and early 1945. However, here in 1950 we were doing the same things again. I told him I thought it was a

shame that we were repeating avoidable mistakes. Well, the comment came back: "You know, you're always going to have mistakes and trouble in time of war." I said, "Why, of course. But so many of the mistakes are unavoidable and so much of the trouble in war is unavoidable that I want to reduce the avoidable mistakes." This planner turned to me and said, "How are you going to tell which mistakes are avoidable?"

There was nothing further I could say to that friend so I piped down, something very unusual for Eccles.

The broad view of distribution is the view of command. Overseas distribution is essentially theater distribution. The theater commander generally views his command as a group of component commands, unilateral task force commands, joint task force commands. His task is to exercise over-all direction and control and to coordinate the efforts of his commanders to the end that there be the most effective use of the combat forces, supported in the most efficient manner.

The theater commander normally exercises his logistic control through the component commanders. For example, the commander of the Air Force component in the theater will normally handle his logistic support by means of the Air Materiel Command and its depots. The Army commander will normally handle his logistic problems through the commander of his communications zone, which may include the new logistical command. The naval forces have a unique capacity for combining great striking power and great mobility. With the addition of mobile logistic support forces they are able to sustain that striking power and maintain that mobility to a very high and effective degree.

Chart 5, page 25.--The whole naval support distribution system, where we are distributing the means of war to the combat forces, is based on the continental shore establishment. Everything that we do moves through it. The men, materials, and services all flow through the continental shore establishment and then fan out. Some go to the advanced bases, some go directly to the floating bases, some go through the advanced bases to the floating bases, and some go directly through the advanced bases and floating bases to the mobile logistic support forces.

These distribution systems, consisting of those major types of support, are all linked by transportation. The transportation is of two types, namely, organic and service-wide.

Chart 6, page 26.--This Navy system of distribution is based on the type commander and the task-force method of organization. The combination of the use of the type commander and the task-force method gives us, what

I believe is, a maximum of responsiveness and flexibility. The economy that we will get in the use of this system, which is inherently good, will be dependent upon the skill with which the system is managed.

Before we take a look at the characteristics of a good distribution system, let me point out one thing and then lead up to a principle. Since combat forces cannot be effectively employed without effective support, and since effective employment depends very largely on enemy reaction, we can deduce the first major principle of distribution; that is, distribution must be immediately responsive to the needs of combat. Putting it another way, the combat commander must control his own logistic support.

Chart 7, page 27.--Now, what is distribution? Distribution consists of accumulation, storage and issue, transportation, and control.

Accumulation is based on the determination of requirements. It is very frequently expressed in terms of levels of supply. But there is more to this than meets the eye. The term "level of supply" can sometimes be very deceptive. In certain categories it can be well and usefully expressed in terms of days of usage; but in other categories it is necessary to consider it in terms of quantities. Petroleum products is an example of this latter category. Fuel oil or avgas can seldom be reduced to terms of days of supply. You think of your petroleum supply in terms of tons, barrels, large shiploads, tanker lots, not in terms of days or levels of supply because you cannot expect to maintain for large naval forces in an active war zone what would be considered by other criteria to be adequate levels of supply. In some instances, the arrival of one tanker has made the difference between an adequate supply for a fleet and a wholly inadequate one.

I think it was 15 September 1950 that the amount of avgas in Japan had gotten down to zero. Fortunately, a shipload of avgas arrived that day and they were able to maintain their operation. So levels of supply can be hazardous when applied to petroleum.

Ammunition usage is very difficult to anticipate. For example, in an amphibious operation we have our supply levels established in terms of days of supply and the rate at which we build up those days of supply. Let us examine this for a minute. If we have an excessive level of supply, we will require more unloading to build that up. By so doing we immediately start our snowball rolling because that additional unloading requires more personnel, more housing, more transportation, more construction, more real estate, and more administration.

The recently agreed upon joint standards for determination of levels of supply are very helpful in understanding this very important problem in distribution.

I suggest to you gentlemen that the average officer who is not conversant with the "facts of life" in connection with overseas logistics would be well advised to consider a force in an amphibious operation with 30,000 or 50,000 men--give it any number you want. Now, calculate the cubic volume of storage space required by that force if it is taking in a 5-day level of supply, a 10-day level of supply, or a 30-day level of supply. Convert the cubic feet into acres, allowing, say, somewhere around 35 percent for storage and 65 percent for access. If you want to build that up to a level of 5 feet, all right. If you want really to be tough, though, build it up to 10 feet; but you will have a hard time doing that.

Remember this: One football gridiron equals approximately 1.1 acres. Since many officers are not particularly skilled in tactical operations, they cannot visualize so many million cubic feet of space, whereas they can visualize 10 or 20 football fields filled 10 feet high. So, if you will make your conversion and discuss your results in terms of football gridirons, everyone will readily understand the difference in bringing in a 10-day or 30-day level of supply. In thinking of the future, this is a very important thing for us to consider.

Now let us consider storage and issue. Storage and issue will always involve construction of one sort or another, be it issue stores ships (AKS) or barges, warehouses, or dumps. Remember the snowball. And also remember that the maximum quantity in storage does not necessarily indicate adequate rates of issue.

Trained personnel and efficient administration to provide ready identification and access to the desired items are essential before you can make adequate issues to support your forces.

It is very interesting to remember that so many of our mistakes in World War II were made by top-flight officers. They were made by fine, devoted officers who were dealing with problems for which they did not have the proper background and training. If we study these old mistakes, I think that a repeat of many of them can be avoided. The mistake of the planners for the naval supply depot at Oran in 1943 is illustrative. They were ordered to build a million-square-foot supply depot at Oran to support the naval forces in the Mediterranean. When Captain (now Admiral) George Bauernschmidt put in his request for storekeepers to handle that job, it was cut to 35. He was told to get native labor to handle the rest

of it. Well, at that time I was on temporary duty in New York with the Director of Advanced Bases, Atlantic. George came in and sobbed on my shoulder, saying, "You can't run a million-square-foot supply depot with Arabs and 35 storekeepers." Nevertheless, he was ordered to make bricks without straw; so he shoved off.

And then the material to fill that particular supply depot started moving across the Atlantic Ocean, landing in North Africa, of course they were swamped. I would hesitate to guess what percentage of it actually served any useful purpose. Perhaps 5 percent would be an overestimate. Let us say, however, they got as much as 20 percent of it; that still is a lot of avoidable waste.

The other day at the Naval War College, Admiral Conolly was talking about how much easier it was for him and his people working in the Mediterranean at that time to send a requisition back to the United States for what they needed and wait for it to come through than go to the naval supply depot at Oran and draw it from this million-square-foot depot. In due time, the Washington planners soon found it was not working out too satisfactorily, so they began flying storekeepers over there. The Arabs had not been of much help. That, in my opinion is one of the avoidable mistakes.

Let us now look at the naval floating bases as a part of the Navy's distribution system. The proper use of the floating base means a great reduction in overhead. For one thing, you do not have to do any shore construction. You do your construction work at home where your ships are much easier to build. That may be expensive in one respect, but they are much easier to build at home than it is to undertake the job of building a base overseas. But you have to plan for that floating base. You have to make your plans for it well ahead of time because if you are to take advantage of the capabilities, you must have specially designed and fitted ships, specially designed barges to get the maximum of efficiency. If you have that, you have flexibility and mobility.

This floating base is intimately related to transportation. You must have a well-controlled system of transportation in order to keep that floating base filled up and working in proper order.

Now, relating that back to the question of level of supply, I believe that, as a principle, the level of supply and hence the amount of storage can be greatly reduced if we have reliable, speedy, signal communications; reliable transportation; and ready, accessible reserves. These, of course, are all interrelated--accumulation, storage and issue, and transportation.

Transportation forms the arteries through which the blood of supply flows. Let us distinguish between the local and organic transportation and the long-distance, overseas transportation. Even more important than that, when we are thinking in terms of a distribution system which is responsive to the needs of combat command, let us be careful to distinguish between carrier operation and traffic management. Certainly you, in your transportation studies, have come across those terms. You are familiar with them. I will not dwell further on them. But when we are thinking in terms of transportation, let us remember that speed over the ground is not necessarily the most important element in the fast turn around of ships. Speed of cargo-handling can be of much more importance.

Let me at this point in the discussion issue a warning against the unplanned use of selective unloading whereby ships will be maintained or brought into an area simply because they contain an item that is urgently needed. Those ships may clutter up that area and offer a tempting target.

Selective unloading is an essential element in certain types of operations but it should be used only on a planned basis. I think in every operation you undertake you should plan that some ships are to be used for selective unloading in order to have that ready, accessible reserve I was talking about. However, do not permit the inadvertently, stupid type of selective unloading that comes from lack of planning, because that disrupts your whole transportation system and in many instances does not give you the material needed.

I know of one instance at Okinawa where a ship was brought up all the way from Ulithi. It came all the way up there because someone wanted 50 tons of dynamite. At that time there were some 3,000 tons of dynamite in ships already in port but no one knew where it was. That is one of the avoidable mistakes, so watch your selective unloading. Selective unloading is going on in Korea today and it is, so far as I can understand, causing a great deal of difficulty.

Tied in with that and tied in also with ship retentions--a fundamental that we learned in World War II--is the fact that your whole transportation system overseas must be geared to the estimates of port capacity. There is no use in sending lots of material overseas if it cannot be handled. It is possible to calculate port capacity and it should be done as a basic element of any transportation plan.

A major principle applying to all fields of transportation and all fields of logistics revolves around the question of priorities vs. allocatio I will explain that principle in this way: Priorities without allocations

are self-defeating. We learned that in our economic mobilization in World War II, in which a man with a triple-A-1 priority found he had nine months to go in order to get anything he wanted because someone else had come along and gotten a quadruple-A priority. Then all his material was set back another nine months. Finally, we came to an allocations system. We must always combine allocations and priorities because of the aforesaid principle that priorities without allocations are self-defeating. You will find that true in every field of logistics. It applies particularly in the field of air transport where a few months ago there was an accumulation of some seven acres of cargo at Westover Field waiting air transport overseas. A friend of mine in walking around Westover Field looked to see how long some of that cargo had been there. Some of it had been there for seven months. That is the sort of thing we did way back in World War II. That is an avoidable mistake.

Air transport is precious; it must not be wasted. Remember, every time you send something by air that should not go by air, something that should go by air does not go. The proper use of air transport will enable you to reduce your levels of supply. This in particular offers an extremely challenging problem for research on which I would like to see the Industrial College continue. There are some tremendously interesting questions involved.

Just as I pointed out before, distribution must be responsive to the needs of combat command, my final principle on transportation is that transportation must be responsive to the needs of combat command.

Chart 8, page 28.--Let us now take a look at control (referring to chart). As we look at control let us visualize distribution as a dynamic flow. It is a liquid flow with reservoirs, surge tanks, manifolds, and valves. By the proper use of these, the amount and direction of the flow of logistic support can be controlled in a manner that is responsive to the needs of command. And let us remember that this flow has a real physical momentum, which takes energy to start. Once it is started, any poor design or mishandling of the control mechanism will result in trouble. Remember, it can never be made foolproof. It can be effectively handled only by one who understands the whole system.

Chart 9, page 29.--This is an oversimplified picture of, in general, the type of flow we have, which is complementary to the other picture I gave of the shore establishment, the floating base, advanced base, and mobile logistic support. Taking the same general thought and illustrating it with a somewhat different picture to give the mechanisms of control,

we see the same thing we saw before but in somewhat different form. In your seminar this afternoon Captain Hesser will undoubtedly give you quite a discussion on this area of the picture. So I will leave it there as being just one illustration of this problem.

In considering principles of control, it is well to remember that overseas distribution control as exercised by the theater commander requires a knowledge of principles; rapid and positive communications; statistical data (knowledge of availability and location); reports of excesses and shortages; cross-servicing agreements; and logistical reserves of precisely the same nature as the tactical reserves that armies have used for centuries. Finally we must have supervision of the planned action.

I suggest that only items in short supply need be directly and centrally controlled; other items should be handled indirectly by broad policy control. I believe the best results will come from centralized policy control with decentralized operational execution.

As I understand the Unified Command Plan, there is no reason why a theater commander should not organize joint commands or task forces for any special logistic support purposes he desires. However, the act of unifying does not necessarily produce efficiency. Efficiency comes from, first, understanding the nature of the problem and understanding the principles--the cause and effect relationships; and, second, it requires the application of sound principles of command to the solution of the problems.

Should we have a single supply line under a unified command? I believe the advantages of such a single supply line are apparent and real. However, regardless of the system the same organization has to be done, the same control has to be exercised, and the same knowledge is required. Consolidation into a single operating system does not guarantee efficiency. As I said before, many of the principles can best be accomplished by a joint staff exercising over-all central control, with the operations being decentralized; exceptions being made in cases of such critical materials as petroleum, transportation, and certain other things which may become critical.

I prefer the decentralized operation of supply because there is less tendency for the over-all staff agency to get down into details. And I think that such a system is more responsive to the operational needs. I might illustrate how the lack of knowledge, with all the good will in the world, can result in absurd initial decisions.

During the last war, in the Mediterranean the Army was providing food for the Navy. Once, one of the cruisers came in just about out of food. It came into one of the depots to draw some food from the Army. Well, since the army was working on a 5-day level of food supply, it required some drastic action by Admiral Conolly himself to get that cruiser filled with more than a 5-day food supply. The whole thing was due to the fact that the man in charge of food was working with a specific directive that had not taken into account naval mobility and naval needs. Yet, he was doing the best he could under the circumstances. But, you see, he did not know that ships carry up to 60 to 90 days of food as their normal ready-for-sea condition. That illustrates what type of knowledge is needed in our control agencies.

I have very briefly discussed the general structure of the factors in distribution. I want to suggest some of the problems that challenge us and illustrate the need for effective continued logistic research.

One of our most important tasks is to develop supply discipline. How can we impress upon commanding officers the need for developing supply discipline in their officers and men? Are we always to accept the premise that Uncle Sugar has plenty more where this came from and therefore the profligate waste and contempt for other people's property that characterizes so much of American youth are tolerable?

I suggest that we very carefully study the relative advantages of floating support vs. shore-base support. There is a place for both of them in the support of naval operations. They should be balanced.

To what degree in future operations can or should the Air Force and the Army use floating support for their operations? I hope nobody says they shouldn't do it, because ship retentions for General MacArthur in the last war were more than the number of ships allotted to Admiral Nimitz. It constituted MacArthur's floating support. Apparently he learned the advantages of this because he is employing the same system in Korea in 1951. Why don't we really make an effort to plan to use floating support where desirable and appropriate for the support of Air and Army rather than do it in a way that upsets all the basic planning that is being done? I offer that to you as a problem for your consideration.

One of the most important jobs we have is to lick the problem of getting better usage data. We frequently know how much of item "X" was procured, but we do not know how much of it went into needful use; how much of it was lost, strayed or stolen; how much of it went into filling pipelines; how much went into the maintenance of stock levels.

We now come to fleet freight. I know all the naval supply officers will perk up their ears on that. Actually nobody knows the whole story about fleet freight. For instance, no one knows how much fleet freight was originated. We do know, however, that at the end of the war material up to the amount of 200,000 tons was dumped on Guam. The average age of that 200,000 tons of material was 15 months. That meant that the 200,000 tons had been traveling around the ocean for 15 months in a fruitless search for its destination.

One officer made an analysis of a segment of fleet freight requisitions and found that 85 percent of them were for nonessential items. In other words, we had ships running around the ocean trying to deliver useless freight.

Admiral Bauernschmidt gave me the most interesting example of fleet freight. If he ever comes down here, he will probably give it to you. There was, it seems, one box of freight delivered to him in the midst of all his troubles with the Arabs in Oran. Contained therein was: one ship's chronometer, two one-gallon jars of coca-cola syrup, and an 8-pound maul. Gentlemen, the maul arrived in good shape.

Now, we do not know whether that material of 200,000 tons left over at Guam was 5, 10, or 90 percent of the fleet freight; we simply do not know. But those who have had practical experience with the fleet-freight problem, have estimated that only between 5 percent and a maximum of 20 percent (a very optimistic maximum of 20 percent) of the fleet freight that was sent out in search of a destination ever got where it should have gone.

Are we going to abolish fleet freight? In my opinion, yes. But, you see, the trouble with us in this country is that we plan for peaceful needs, for easy peacetime problems, and then when the wartime problems present themselves we're frequently caught with our pants down.

If we are going to abolish fleet freight in time of war, we had better provide some more technical store ships and put them out in the forward area so that the man who needs something can go to one and draw it. We had better provide a very reliable special express transportation system similar to the one we had with the LCI's which ran from Pearl Harbor to the Mariannas in 1945 with BuShips spares. In this we should consider not speed over the ground, but speed of identification and ease of cargo-handling. Then we can abolish fleet freight and save many thousands of tons of expensive procurement.

Let me sum up, gentlemen, by saying that a real index of effectiveness lies not in statistics of tons or shiploads of material transported or stored; but rather the index of effectiveness is the manner in which the combat forces are supported; that is, the percentage of wants filled and the percentage of those quantities procured which were actually delivered to a user.

Finally, let us discuss logistic psychology as it applies to the logistic snowball. Much of the overordering and oversupply that we saw in World War II came from a lack of faith of subordinate commanders in the wisdom and logistic understanding of their superiors. Estimates were padded at each echelon with the final result that the procurement demand frequently had no relation to the legitimate use.

General Hayford once told me of estimates for ammunition coming through for an amphibious operation. He cut these estimates 90 percent, yet there was more than ample. What had happened was the first fellow who started the estimate had requested twice as much as he needed. Everybody along the line just doubled it up. This seems to be a vicious circle. This lack of faith results in the final analysis in overestimates. In turn these result in overloading the distribution facilities. So, you have your snowball continually rolling. You get inefficiency in distribution. You get a failure to deliver the goods to the customer. You get a bigger overestimate the next time.

We can cure this whole situation by research, analysis, education and training, provided we have in these endeavors the spirit of enthusiasm derived from the knowledge that we are dealing with a vital thing in this element of war; that what we are doing is worth-while; that what we are doing is contributing to the most effective deployment of the greatest degree of fighting power.

Thank you, gentlemen.

QUESTION: Captain Eccles, you showed one chart in which you had a number of valves, surge tanks, and so on. It was my experience during World War II that, in the Army at least, too many people had access to those valves. In other words, the commander of a base section or a G-4 subordinate command had access to those valves. They could turn them at will without knowing what was going on in the remainder of the system.

What I am leading up to is the position of the transportation component of this system with respect to the over-all command. Do you feel that the transportation control should be subordinate to the supply control, or should they be on an equal level? In the Army we have a system whereby the transportation system is more or less subordinate to the supply system. The British, on the other hand, have them on an equal level.

Do you have an opinion on that, sir?

CAPTAIN ECCLES: I wrote a book which is going to be published by BuPers in April 1951—in time you will receive copies of it—entitled "Operation Naval Logistics." I have in it the best opinion I could muster after sweating over this question on transportation.

You raise a point which I know is tremendously controversial in the Army. I know that the same basic point is also controversial in the Navy; however, I do not think the reaction to it is quite so strong in the Navy as in the Army. I think the opinion in the Navy is about 50-50.

I am inclined to favor G-4 control of both supply and transportation. That means transportation does not dominate supply or supply dominate transportation. That is my own feeling in the matter. That is my feeling very strongly in so far as Navy supply and transportation are concerned in the field of overseas sea and air transport.

Now, in the field of domestic transportation it is an entirely different thing. So far as the Navy is concerned, the manner in which the Bureau of Supplies and Accounts handles the Navy's domestic transportation, in my opinion, is excellent. I have no suggestions to offer for the improvement of that.

I am sorry I cannot give you a definite answer in direct terms. I would, however, say this: I am sold on the concept of logistical command. I think Colonel Reinhardt's article in the January issue of "Military Review" is splendid. I think we ought to strengthen that approach to the problem. I believe by strengthening that approach we will improve the whole situation.

I am sorry to be so vague on it, but I frankly do not know enough about the Army picture.

QUESTION: Captain Eccles, will you please explain a little bit further how you would suggest stopping a supply officer from hedging? I've never heard of a supply officer getting into trouble because he had too much of anything.

CAPTAIN ECCLES: Maybe I am somewhat of an idealist, but I think you must have some sense of idealism in this. The ideal comes from the full development of this educational system we see here and elsewhere, whereby your commanders and your responsible staff officers would understand the importance of safety factors. When your supply officer hedges, let him hedge openly. In other words, he might say he needed so much. He might,

for instance, estimate he needs 10 percent more for a reserve. The reviewing officer would have sense enough and enough understanding of the needs of combat command to permit the other man to keep that much in reserve.

I think that is really the only way you can possibly avoid the pyramiding of reserves. I think it all comes back to this problem of logistic psychology. We have to develop faith both ways. Any hedges would be open hedges, and the people attempting to work with them could recognize them as such.

That is the only answer to this problem that I know of. It is a long-range, tough problem.

QUESTION: I am very much in accord with your idea of floating depots for the Army and Air Force. When you study the problem you get to the point where you are tying up quite a bit of valuable transportation in this one function. My question is this: In your studies of this problem, have you considered whether we could have integrated supply units, possibly in the form of "pods" that could be sailed across the water? For certain types of supplies, such as spare parts and those things which are difficult to classify and issue, could they be put in "pods" maybe the size of a flat car, or something of that nature?

CAPTAIN ECCLES: I would say this: What you suggest is a very worthwhile subject for research and analysis. I will not give you any answer on that except by all means let us study that problem.

The conservation of shipping is not a war objective. Let us get our fundamental thinking straightened out. The conservation of shipping is a means to the attainment of certain objectives. Under certain circumstances you may want to sacrifice certain elements through a conservation of shipping in order to attain greater combat effectiveness; but let us not permit our combat effectiveness to be broken down merely as the shibboleth to conserve shipping. Let us learn how to get the most effective use of shipping. Let us study all of these things. Let us support all the officers in the service who are now fighting a very tough battle to get better logistic research. Let us give them our full support in every field we can.

QUESTION: Sir, when you said we need a logistic command, do you mean we need a Department of Defense, Services of Supply, similar to the Army Services of Supply of World War II?

CAPTAIN ECCLES: No. I am very much opposed to a Department of Defense, Services of Supply. I believe it would be so big, so complex

that it would defeat its purpose. I think the coordination that has been taking place in the last few years in the matter of developing unified supply policy, developing cross-service agreements, developing mutual understanding will give us a much more efficient support of our combat forces--Army, Navy, and Air--than would a huge completely centralized supply system. I think a single Department of Defense supply system is the single best means of being defeated in the next war.

QUESTION: I would like to have the term "fleet freight" explained a little further. For instance, you spoke of mauls and what not floating around in the same box.

CAPTAIN ECCLES: I'm sorry. I should have elaborated a little bit on fleet freight.

In our continental shore establishment we have shipyards, supply depots, and so forth and so on. A ship being newly commissioned or one coming in for needed repairs is completely gone over. Supposedly, it is in 100 percent operative condition when ready to sail. All the spare parts are aboard; she is filled up with food, supplies, and ammunition. However, that 100 percent perfection is never attained, particularly in time of war.

In peacetime, when that ship leaves port to go overseas or departs from overhaul, the supply officer will leave behind a stack of requisitions to make up the shortages in his stores and allowances. Those requisitions will then be processed. In some instances, for certain elaborate spare parts, long-range procurement has to be initiated. They might be proprietary items. Shortly after the ship sails, those supply depots concerned with transporting the equipment will be packaging up the material to fill those requisitions and shipping them out to that ship.

In peacetime you have the schedule of operation for the ship. For instance, you know that on the first of January or the first of April she is going to be in Guam. The first of June whe will be somewhere else. The first of November she will be in Pearl Harbor. In other words, you can plan so that the material will catch up with the ship. Since the ships will generally carry out the schedule, a very high percentage of that material that has been requested will eventually reach the ship.

But in time of war you start the stuff going to Londonderry, say. They change their minds and send the ship direct to China at the highest possible speed. She ends up in Guam. You still have 10 tons of freight left standing in New York headed for Londonderry. Some one in New York hears about it and from New York the freight is forwarded to Argentina,

but Argentia cannot handle it properly. The communications system soon becomes cluttered up. As a consequence, you wind up with a lot of stuff just charging around going nowhere.

That, gentlemen, is fleet freight.

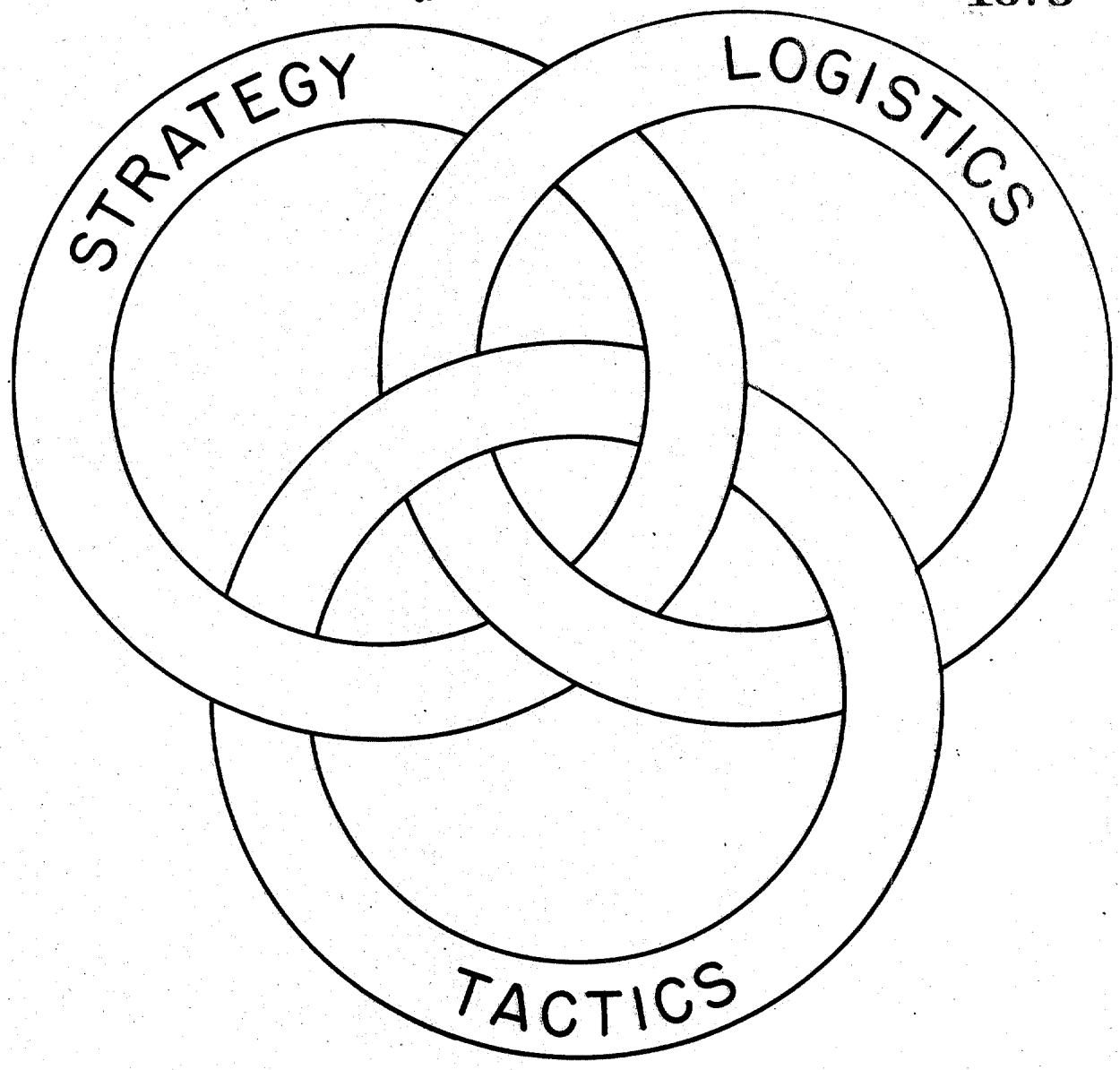
CAPTAIN DAVISSON: I think that is just the note on which to end this discussion. Captain Eccles, I simply want to say, "Thank you."

CAPTAIN ECCLES: And thank you very much.

(29 Mar 1951—650)S.

Chart 1

1673

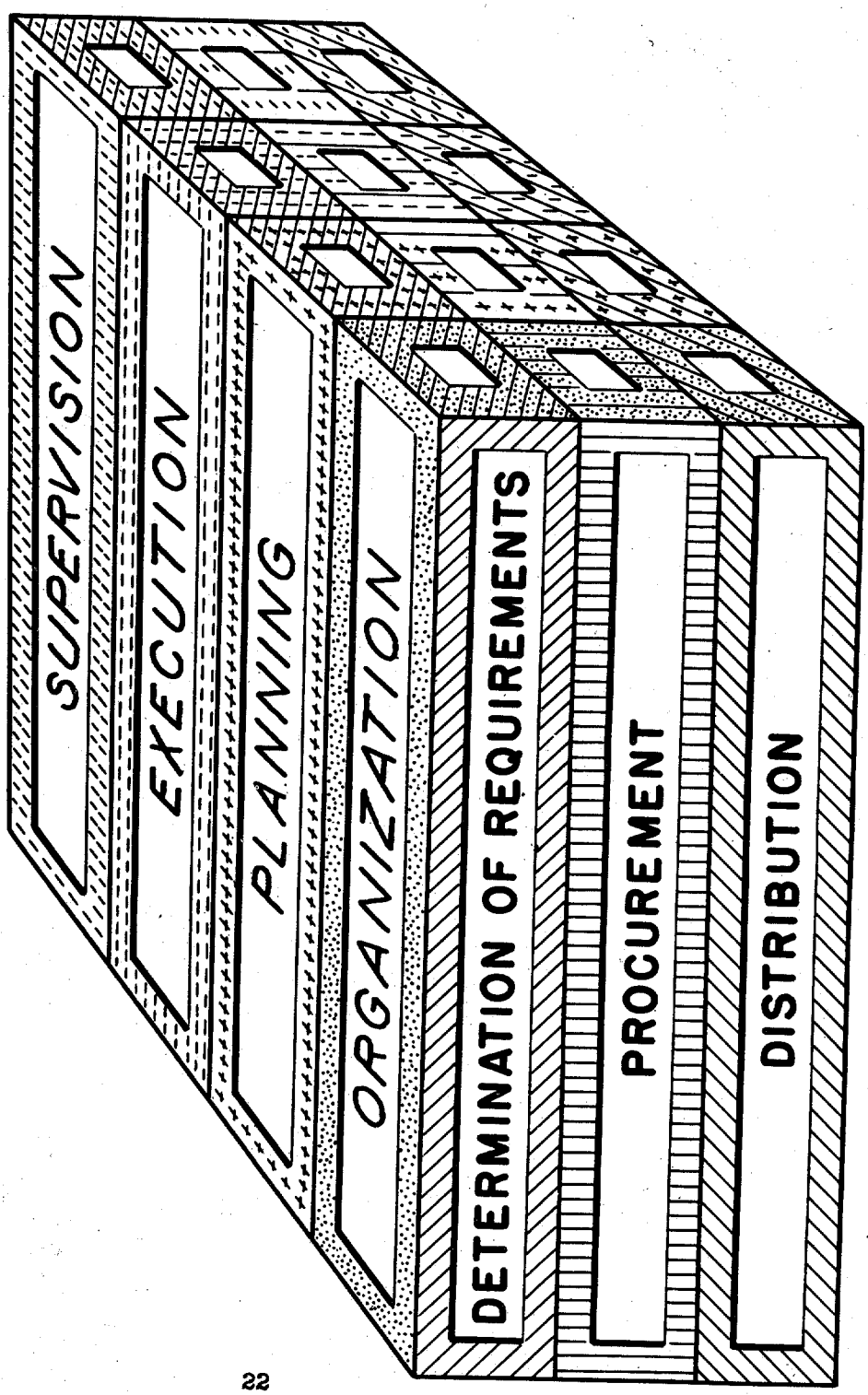


STRATEGY AND TACTICS PROVIDE THE SCHEME FOR THE CONDUCT OF MILITARY OPERATIONS

LOGISTICS PROVIDES THE MEANS.

FUNDAMENTAL ELEMENTS AND BASIC ASPECTS

Chart 2



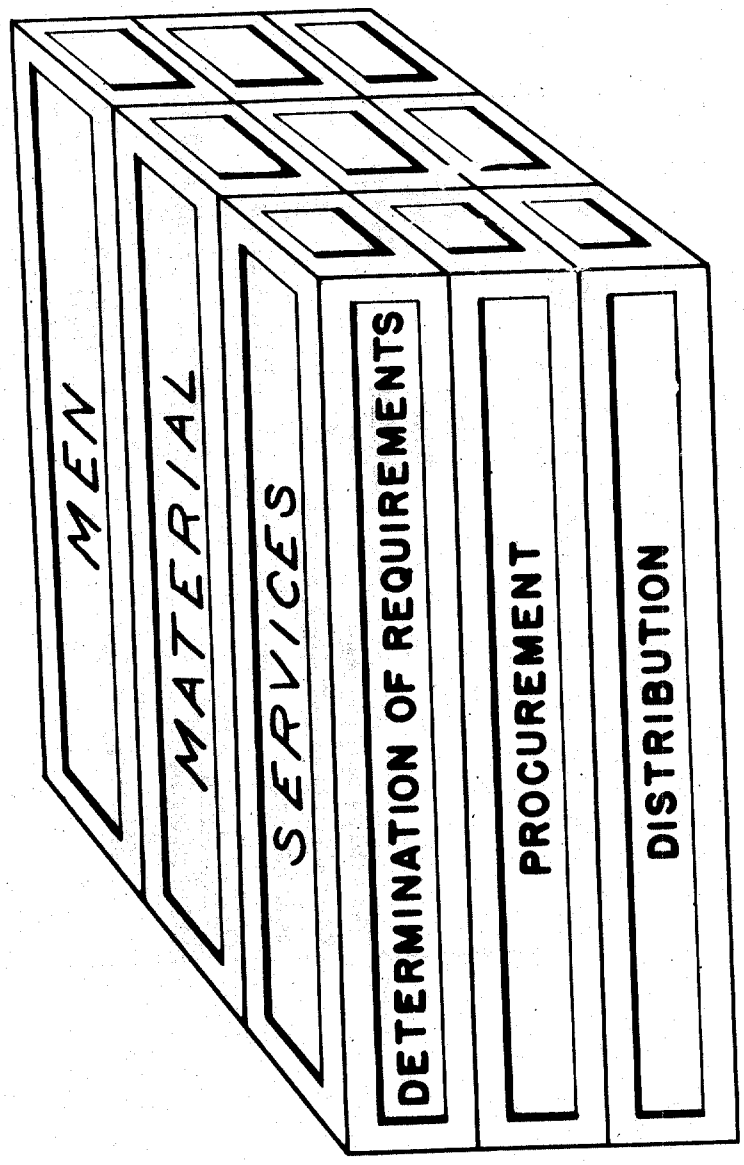

MEN
MATERIAL
SERVICES
DETERMINATION OF REQUIREMENTS
PROCUREMENT
DISTRIBUTION

Chart 3

1676

Chart 4

4-1500

	10 Buck Rogers	10 Joe Doaks
Man days useful work	10	5
Man days supervision & support	3	5
Total personnel =	10 + 3 = 13	10 + 5 = 15
Useful work done / Total personnel	$\frac{10}{13} = .77$	$\frac{5}{15} = .33$
Efficiency Factor	$\frac{.77}{.33} = 2.3$	

C. & G. S. S. Ft. Leavenworth, Kans.

6" CAPT MANTGOMERY U.S.N.

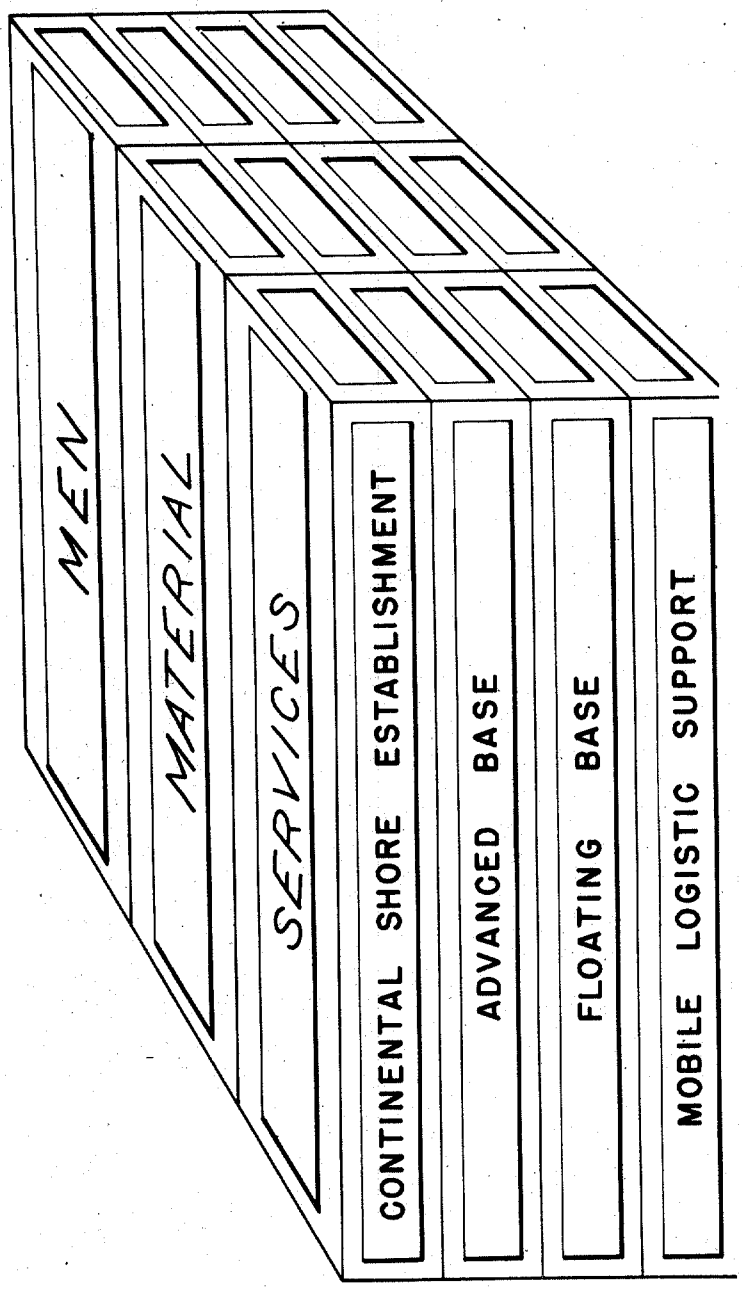

MEN
MATERIAL
SERVICES
CONTINENTAL SHORE ESTABLISHMENT
ADVANCED BASE
FLOATING BASE
MOBILE LOGISTIC SUPPORT

Chart 5.

Chart 6

CHARACTERISTICS OF A GOOD DISTRIBUTION SYSTEM

- RESPONSIVENESS
- FLEXIBILITY
- ECONOMY

Chart 7

ELEMENTS OF A DISTRIBUTION SYSTEM

- ACCUMULATION
- STORAGE AND ISSUE
- TRANSPORTATION
- CONTROL

160

Chart 8

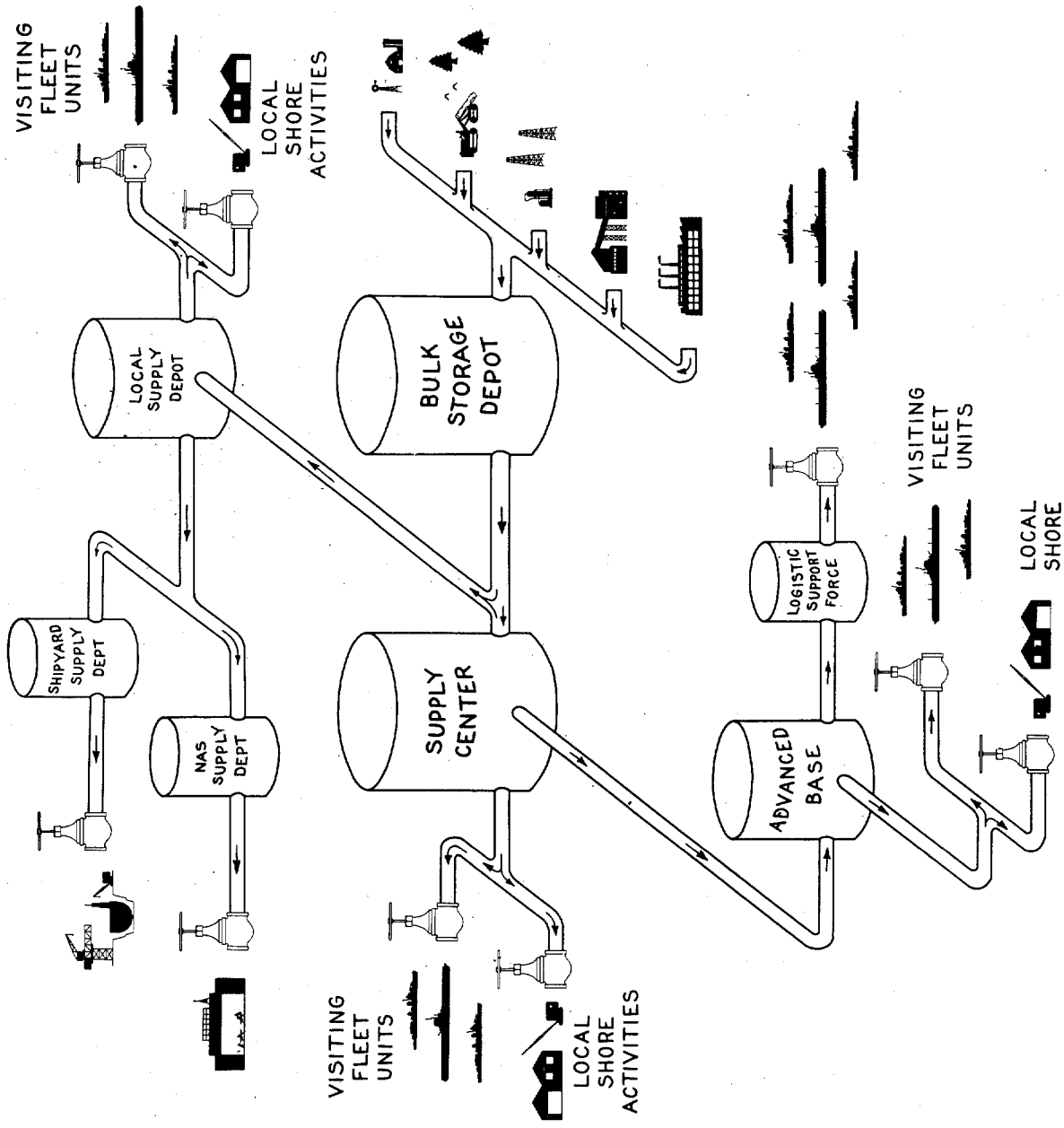
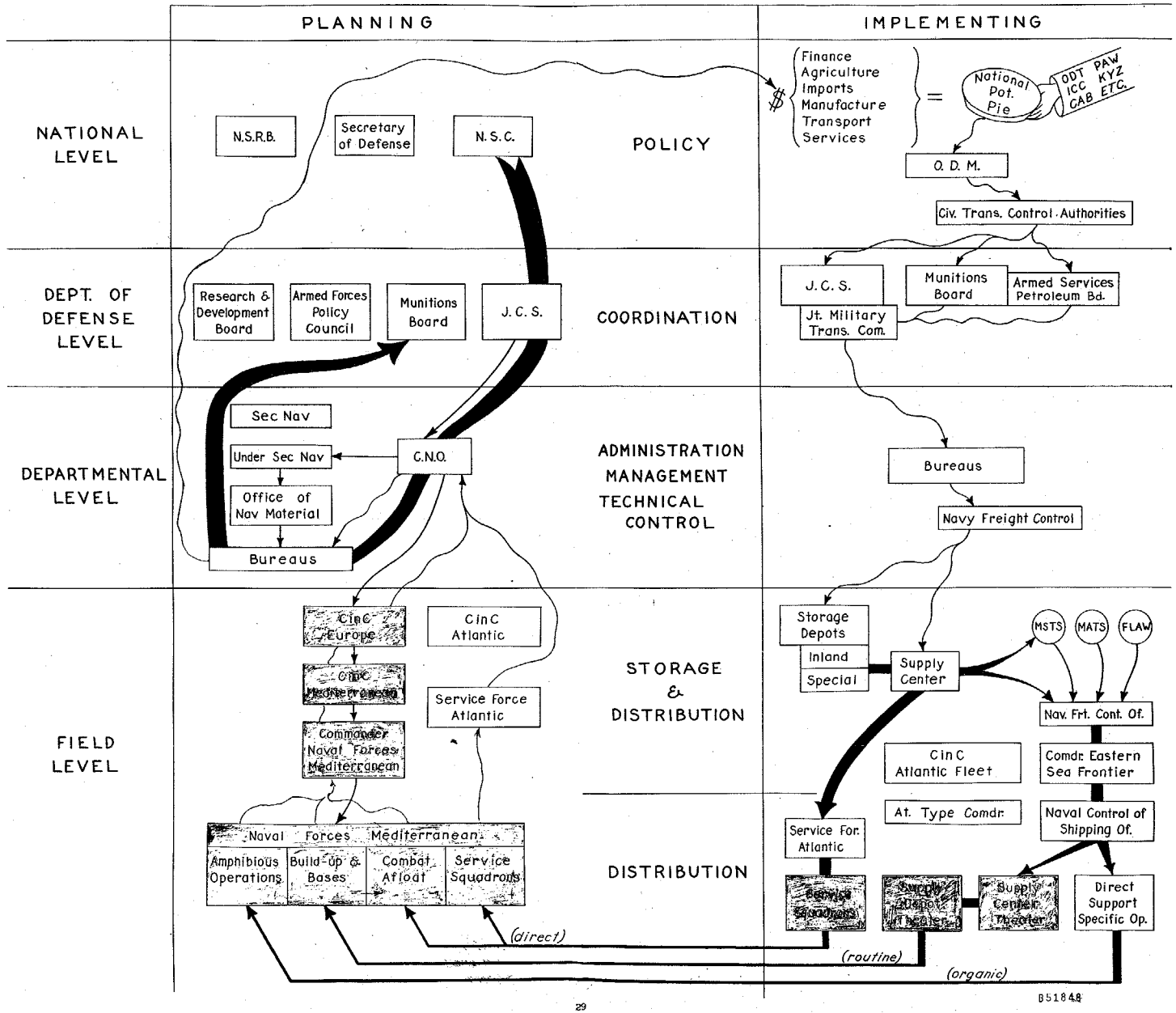


DIAGRAM OF FLOW OF NAVAL MATERIAL

Chart 9

LOGISTIC RELATIONSHIP BETWEEN THEATER AND Z-I



TRANSPORT IN MODERN WAR

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