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INTRODUCTION TO DISTRIBUTION LOGISTICS

31 March 1953

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INTRODUCTION TO DISTRIBUTION LOGISTICS

31 March 1953

COLONEL HOLMES: This morning we begin another of those courses which serves to tie together other parts of the curriculum. Do not feel that because the time allotted is relatively short, the subject is not important. Actually, it is one of the most important ones today. In view of certain statements bearing on logistics in the Armed Services made by President Eisenhower in his February message on the State of the Union, it is coincidental that we are going into the course "Distribution Logistics" at this time.

If the term "Distribution Logistics" has bothered you, consider yourself "not alone in the boat." I felt as you did when I first heard it. Parenthetically, if any one can dream up a more appropriate word or phrase, he gets a feather for his cap at graduation. By our term "Distribution Logistics", we mean "the distribution phase of logistics."

Before discussing Distribution, let us consider the over-all significance of the term, "Logistics." A realization of its far-reaching concept is essential, since Distribution is only one of its many aspects. To many, Logistics seems relatively new. This may be due to two reasons: First, for a long time, there existed uncertainty as to what elements Logistics should include as against Strategy and Tactics. This uncertainty was brought about, no doubt, by the extensive changes which have developed in the art of waging wars; second, and I think the most important, is that the emphasis which it deserves has not been placed on Logistics. It is only fairly recent that this short-sightedness has been realized. A few months back, we heard Captain Johnnie Hays say it another way, and I quote him--

"Logistics . . . has now come into its own, somewhat begrudgingly, somewhat belatedly, and has an equal status with Strategy and Tactics in the trinity of warfare."

Logistics is not a new word, nor is the fact that it is intimately related to Strategy and Tactics a new concept.

By way of illustration, logistics consists of the ways and means through which the plans of strategy and tactics are accomplished. Strategy encompasses the decisions as to where action is to take place. Logistics encompasses the movement of the troops to the scene of action and their support therein.

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That concept is found in a book by Baron De Jomini, a staff officer of Napoleon, entitled, "The Art of War" published as long ago as 1836. Colonel George Cyrus Thorpe, United States Marine Corps, in his book, "Pure Logistics" published in 1917, gave Jomini the credit due him by stating that although the word "logistics" was not used by Napoleon himself, the only classical writings on the subject of "logistics" were contributed by his staff officer, the Baron. Further, Colonel Alfred H. Burne of the Royal Air Force in his book "The Art of War on Land" published in 1944, credits the Baron by stating that the term "logistics" was created by him.

Jomini admitted that in his earlier writings he had erred in following other writers and had included the details of staff functions relating to the Corps of Quartermasters under the name of Logistics. The term "logistics" at that time was derived from the title of Major General des Logis. The duties of this officer were limited to the lodging and camping of troops. The Baron then realized that as wars forsook the encampment concept, movement became more complicated, which resulted in more functions being assigned to staff officers. As a consequence, the Baron believed that the old concept of logistics was not adequate nor satisfactory to cover these additional functions. Therefore, he strongly recommended that Governments accurately spell out in regulations the logistic functions of staff officers.

Jomini listed several maxims in his book which you might find very interesting to read. Here are a couple that not only prove that the concept of logistics is pretty old but also indicate that the old-timers knew something of distribution too. The Baron had realized that the large armies of Louis XIV and Frederick II had lived from storehouses which were established as the troops moved. This interfered with operations as the troops were restricted in forward movements by the distance from the storehouse areas in proportion to the number of rations carried by the troops and the number of days it took the wagons to go to and from the storehouses.

Realizing these limitations, Jomini offered a new plan. Forces would take with them 30 days of supply and live off the land. They would form "depots of supplies" in which they would store the provisions collected from the countryside. He cautioned that supplies would have to be collected and stored in sufficient quantity not only to maintain the troops until the next operation but also to start them out again with another 30 days of supply. The Baron advised that it was necessary not only to collect quantities of supplies but it was essential to also have means of conveying them. In addition, he recommended very strongly that there should be frequent inspections of material and that there must be good lines of communications and depots as armies advanced. In my opinion, he was stressing, in present day parlance, an efficient distribution system including supply economy.

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With his pearls of wisdom in mind, let us leave the Baron and move on.

Logistics, as we know it today, consists of three fundamental elements or basic aspects: Determination of requirements; procurement with its relationship to production; and distribution. In your previous studies you have been well exposed to the first two. It is the third element, Distribution, that we are concerned with now.

It must be kept in mind that in all logistic problems, these elements are interrelated; they blend and overlap. Saying it another way, logistics does not lend itself to compartmental thinking. It is impossible to draw a definite line of demarkation between requirements determination, procurement, and distribution. Action is continuous throughout the logistic cycle. The importance of each element may vary from time to time depending upon circumstances; however, no element must be overlooked. It is this intermingling that makes it so difficult to discuss one element by itself. Because of this, there will be times when I will use the word logistics or the term supply management synonymously.

Now what do we mean by distribution? Where does it start and where does it end? From the Joint Chiefs of Staff Dictionary of United States Military Terms, I quote:

"Distribution. . . . That functional phase of military logistics which embraces the act of dispensing materiel, personnel, facilities, and services. The function includes, but is not limited to, receipt, storage, transportation, and issue of materiel; housing, subsistence, assignment, and movement of personnel."

Although personnel is one of the many aspects of distribution, I will not cover that particular phase.

Distribution begins where procurement ends. As expressed by Captain, now Rear Admiral, Henry E. Eccles, USN, Retired, for all practical purposes it may be considered as starting with accumulation of material at continental depots and ending with the delivery to ultimate consumer.

In considering distribution, the fundamental concept is that the user must be supplied automatically or be able to request supplies or equipment from a source that will meet the need in ample time. This is true whether it is ammunition for the most remote operating theater or office supplies for the Pentagon. This creates the need

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for a distribution system or pipeline. Think of this pipeline not as a petroleum or gas line but as a system of storage depots from the zone of interior to the overseas theater; and an adequate, if not regular, movement of supplies by land, water, and air to the front lines. The primary mission of this distribution system must be to assure delivery of the right thing at the right place in not only the required quantity and condition but at the required time. All of this must be done in such a manner as to avoid excesses or at least to keep them at a minimum through adequate advanced planning.

There must be then central control agencies having sufficient knowledge of anticipated requirements to initiate the procurement and control the movement of materiel to either overseas areas or zone of interior destinations. It must be the responsibility of such an agency to establish and disseminate policies and procedures, to those operating the supply system, which provides for adequate distribution right down to the ultimate consumer. Directives must include, among the obvious, such things as: reporting and accounting procedures; stock numbering; cataloging; stock levels; inventory; maintenance and repair; as well as surplus materiel disposal.

Since the basic elements of an effective distribution system are important, let us consider them for a moment. Admiral Buck, USN, highlighted them in a lecture to this College in October 1946.

First, we have the storage system--that is the physical plant or depot. It includes its type, size, location, and equipment as well as its functional relationship and mission.

Second, there is the control system which includes cataloging and item identification; storage and traffic control; stock and stores--or fiscal--accounting and reporting; receipt, issue, and disposal control; and supply-demand review.

Third, we have the materiel in the system.

Lastly, the operating personnel.

These elements or functions blend and overlap in varying degrees. However, they must operate in concert with each other; not in conflict. By way of illustration, packaging, packing and crating must be designed to meet anticipated service warehousing and materials handling conditions because light commercial packing and crating requires careful and slow handling operations. Another illustration, storage practices which assure maximum accessibility and ease of identification of material for issue and inventory purposes must be employed sometimes rather than those which are based solely on the economic utilization of storage space.

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It is impossible to view each of these elements of distribution in isolation. Take cataloging as an example. It is a control measure for both distribution and procurement. It aids identification and exposes items which lend themselves to standardization and common use. It is through cataloging that the language used in material supply systems is standardized. In the absence of standard descriptive language, it is possible to procure the same item under a variety of different stock numbers and prices from the same manufacturer.

In order to evaluate not only a distribution system but also its elements, a knowledge of the three characteristics of a good distribution system is necessary: Responsiveness--the system should be responsive to the needs of the forces it supports. If the forces to be supported are in a combat zone, close coordination becomes a must and the need for a greater degree of control by those forces should be realized and accepted. The system must be responsive to any limitations imposed upon it; Flexibility--the system should be capable of significant and quick expansion from peace to war without loss of effectiveness; it should be capable of adapting itself to the ever-changing plans and operations brought about by strategic necessity; Economy--the system should operate during peace and war in the most economical manner possible without reducing its effectiveness in fulfilling its mission. As a matter of interest, Rear Admiral Eccles has developed these characteristics more fully in his book "Operational Naval Logistics".

In our search for improvement, it is important that we consider some of the errors of the past and some of the lessons learned therefrom. Further, I feel that advice based on experience or detailed research is also important. This advice is sometimes most valuable and yet overlooked. As an explanation of this last point, Colonel Thorpe, whom I mentioned before, offered advice based on lessons of every war in the hundred years preceding his 1917 writings. One bit of advice was that there are characteristics of logistics which are common to both land and naval forces and that they could be employed actively in unity to achieve the benefits of economy and efficiency.

Gentlemen, since the concept in that last statement is a present day "hot potato", I am going to repeat it--there are characteristics of logistics which are common to both land and naval forces and that they could be employed actively in unity to achieve the benefits of economy and efficiency.

It is an accepted fact that World Wars I and II are different types of wars. The First World War was considered in its time to be an all-out war--but it was actually a one-theater war with one main pipeline. The Second World War was different. There were 11 theaters with at least the same number of pipelines--maybe more. In both wars,

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land, sea and air forces operated together. Nevertheless, lessons of preceding wars, notwithstanding the opportunities presented, were not applied too well when it came to exercising in unity, in the interests of economy and efficiency, those features of logistics which are common to all services.

I think it was a general concensus, prior to World War II, that the Services believed their tasks to be primarily tactical in nature. As a result, training and education of officers emphasized tactical principles in the employment of troops and weapons. I do not intend to convey the idea that we went into World War II without any appreciation of our logistic problems. There had been acquired some degree of recognition of the principles of logistics. However, adequate planning for long campaigns to be carried out concurrently in many overseas areas was lacking. The Services lacked the ability to coordinate with each other when operating in the same areas.

As World War II progressed, the Services often entered into competition for production facilities resulting in a situation which required aggressive reconciliation. The urgent demands from the overseas forces were filled in spite of the realization that there were duplications in the supply effort. As a result, there were surpluses of certain supplies which eventually became so burdensome to the operating forces that requests were made for shipping space, already critical, to move the excesses elsewhere, even back to the zone of the interior. Large overages in certain items began to appear in some commands while shortages in those same items existed in others in the same area. The transportation facilities, already over-burdened, were further taxed by the necessity to move critical materials from overseas to this country. Yet because of a lack of coordinated planning on the part of the military services, there developed wastage in this vital area. For example, at one time in 1942, there were more than a hundred ships lying idle in the South Pacific at Noumea waiting to be unloaded.

I think that we have gone far enough to draw certain conclusions. We can all agree on at least one, and that a most important one. Logistics had not received sufficient attention. There was an evident lack of full appreciation of its complexities and the extensive nature of its scope. Action on the part of the Services subsequent to World War II proves this point. The educational systems of the Services were revamped. The study of logistics was expanded and the subject itself received new emphasis at existing Service schools. As joint colleges were formed, logistics was given a prominent place in their curricula.

There is no doubt but that World War II distribution troubles and errors with their effect upon the economy and their conflicts

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with the theories and practices of efficient business management played a large role in the pressures which moved toward unification. We are all familiar with the National Security Act of 1947. The passage of this act did not necessarily mean that the Services had not recognized their weaknesses in this respect. Through lessons of the war, much had been accomplished prior to that Act in the fields of coordinated procurement, joint use of commercial warehouse facilities, development of uniform contract procedures, and other areas. In numerous fields, the act merely formalized what had been developed previously and successfully put into operation by the Services.

Speaking of the National Security Act of 1947, there is no doubt that one of its intentions was to blend our logistic systems and operations into effective coordinated mutual military support. Since its passage and its amendments, some improvements from a supply management viewpoint have been noticed. However, it is alleged that improvement has not progressed to a degree that satisfies Congress and the public. When it comes to distribution coordination, it has not progressed even to the questionable degree of satisfaction that procurement coordination has. Putting it another way, it is considered that we are just about keeping our heads above water when it comes to solving our distribution problems.

It is impossible to leave this topic without making reference to the Korean conflict. With all the experience gained by the lessons and mistakes of the last war, how many mistakes were duplicated at the outset of that conflict? It appears that we simply failed to take advantage of the five years which elapsed between the end of World War II and that conflict. To illustrate, in World War II, the military departments had their own methods of describing and numbering their items of supply. There was little coordination and no uniformity between them. After the war, the Services recognized the need for uniform supply cataloging. As a result, the Army-Navy Munitions Board established a catalog agency which was later absorbed by the Munitions Board Cataloging Agency under the provisions of the National Security Act of 1947. After five years, certain members of Congress became dissatisfied with the progress that had been made in the field of cataloging and legislation was passed to expedite a single Department of Defense catalog.

The Korean conflict had started before this action, so we went into that fracas with about the same degree of uniformity in supply cataloging as when World War II ended. By that I mean, we did not have a common language or uniform stock numbering system among the Services. This is not to say that progress in cataloging operations within each Service has not been achieved for great strides have been made. A single catalog for the Services will be forthcoming as a

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result of the "Defense Cataloging and Standardization Act" (Public law 436) of 1 July 1952. Already one portion of this single catalog, covering subsistence items, has been promulgated for common use by the Services.

Reports indicate that experiences of past wars have been repeated-- that our present basic Tables of Equipment not only contain non-essential items but also include rates which are too high. Forces have generally gone into a theater with all the equipment called for by those tables, whereas when going into actual combat, forces take only the essentials, leaving the non-essentials behind. This results in an accumulation of unwarranted items which eventually leads to excesses. Even so, requests to add additional questionable items and increase allowances of present items in our Tables of Equipment are still being made and in some cases approved. Maybe this is a result of the American way of life--a state of plenty. Maybe this is a result of lack of economical thinking or adequate planning. You will have to draw your own conclusions. However, consider this: There has been an inclination on the part of top-level planners to overload combat forces. Basic Tables of Equipment should include only those items which are habitually necessary in combat. So why not determine what items are "habitually necessary" from forces fresh from combat?

Why have we heard so much about logistics recently? The movement for economy and the problems involved in achieving a more efficient supply management operation in the Department of Defense are the primary influences that have made the subject of logistics so important today. It is almost impossible to read a newspaper or periodical, listen to a radio or television commentator without being aware that the spotlight of Congress, the public in general, and now, our new President is focused upon logistics and all aspects of supply management in the Department of Defense.

It is axiomatic, with the Federal budget in the neighborhood of 80 billion dollars a year, out of which 50 billion dollars is for the Department of Defense, that the President, the Congress, and the public will continue to be vitally interested in military practices and operations. Unification, standardization, coordination, elimination of duplications, and overlappings are key words of the day because of their influence on the goal of more economical operations. The objectives of Congress are to achieve economy; the objectives of the military, to achieve this economy without loss of effectiveness in accomplishing its mission.

Congress apparently has not been satisfied with the progress made in the Department of Defense to achieve a more efficient and economical supply management operation. There are numerous factors and problems, some justifiable and some unjustifiable, which may be considered as impediments to progress. In order to analyze these, one must think of

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the size of the Department of Defense supply business with its approximately three-and-one-half million items. There is no comparable counterpart in industry. Then, there are the customs and procedures of long standing which have become firmly entrenched within each service.

There is also the element of human behavior to be considered for there are many who are reluctant to accept restrictions and many who offer passive and aggressive resistance to change. Often, uncertainty regarding the permanence of major changes causes impediments to progress. It is a normal reaction on the part of individuals to refrain from putting forth whole-hearted effort into projects when there exists a possibility of further change in those projects.

The pros and cons of a fourth service of supply have been discussed for a long time. Adoption of such a system, even if only in part, would result in major changes to existing practices. As a result of Congressional hearings and investigations, statements have been made that the National Security Act of 1947, as amended, should be further revised. By way of illustration, House Bill, HR 1522 (83rd Congress, 1st Session) dated 13 January 1953, has been introduced and referred to the Committee on Armed Services. This bill provides for a new Title V to be added to the National Security Act.

Under this new title, an office of Under Secretary of Defense would be created. This title also provides that, subject to the authority, direction, and control of the Secretary of Defense, the Under Secretary of Defense shall, among other things, "develop standardized procedures and forms for supply and service functions; eliminate duplication and overlapping within and among the supply activities of the military departments in the fields of production, procurement, warehousing and distribution; establish and operate depots for common items and other common supply and service installations through the United States, and develop unified logistic organizations overseas." There is also a proviso that would transfer the functions of the Munitions Board to the Secretary of Defense. From another source, a very recent suggestion has been made to transfer the functions of the Munitions Board to the Office of Defense Mobilization.

Let us return again to the key words of the day: unification, standardization, coordination, elimination of duplication, and overlappings. Let us consider a few of the problems that arise in some of these areas. To what extent may each of these be prudently carried before arriving at the point of diminishing returns? Putting it another way, what criteria should be used to measure economy versus effectiveness or to what extent should operational effectiveness be sacrificed to achieve economy?

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Think of this especially when circumstances of supply operations under wartime conditions are ever-changing. To illustrate, air transportation may, under certain conditions, increase effectiveness and be more economical. This is especially true in the case of transporting very costly items to maintain stock levels of these items at a minimum. If, however, any category of materiel becomes backlogged at the air field, the operation is not only ineffective but also uneconomical.

Another problem is this: Timely stock status information assists in reducing the accumulation of materiel in the pipeline and speeding up the distribution and redistribution of stocks. If stock status reports were confined to the reporting of only critical items and very active items, would efficiency be increased since supply-demand review could be accomplished on few items with more rapidity? Or would this lead to inefficiency since stock status information would not be available on all items?

Let us consider coordination for a moment. I think we will agree that coordination is essential. But coordination extended too far, on the other hand, can lead to inefficiencies which are just as uneconomical as those existing under lack of coordination. But again, what criteria does one use to determine the best in-between mark?

It might be said, by way of summation, that there are certain practical limitations to which these measures may be prudently carried. It is inevitable and necessary that a certain amount of duplication and overlapping should exist among the services because of the very nature of their varied missions. To go too far in the elimination of duplications and overlappings might reduce the effectiveness of military operations and, as a result, defeat the purpose of achieving economy and operational effectiveness.

Now let us look at a few broad considerations to guide us in our present and future thinking.

Prior to World War II, it was a common belief that our resources were unlimited. As the war progressed, shortages in essential equipment began to appear although our forces were for the most part adequately supplied. In thinking of a future war, consider, if you will, the fact that although our resources are still large, they have been diminished. They cannot and must not be expected to support another war in as lavish a manner as the last one.

Consider, too, the certainty that our potential allies will require extensive logistic support with the probability of their contributing less than those of World War II. If such is the case, our supply lines will be more numerous and our transportation systems more heavily taxed than ever before. If sabotage and damage to our

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zone of interior by enemy attacks are effective, our logistic problems will increase and logistic potentialities decrease. Should these "ifs" become a reality, the logistic capabilities of the nation will be taxed to the utmost.

Therefore, since the success achieved in a future war will be dependent to a great extent on the plans that are made in peacetime, we must conscientiously search for methods to improve our supply management operations so as to achieve the maximum degree of economy without decreasing military effectiveness. Lack of adequate planning results in waste of storage space, waste in transportation, and waste in every other related function.

My message is aptly summed up by a warning of Ballantine in his book entitled, "United States Naval Logistics in the Second World War." In speaking of postwar dangers, he warned that military and naval officers might forget that the economic aspects of war are a vital part of their professional affairs. He went further to caution that such forgetfulness would be detrimental to the future of our military security.

Gentlemen, that ends the formal part of my presentation. Now I would like to explain how we will run the course on Distribution Logistics.

I hope no one will be disappointed with this remark--There will be no written reports.

There will be student presentations. The subject and method of presentation are being developed by the individuals concerned and we are sure that they will be both novel and enlightening.

We will have four lectures. All of them will cover controversial areas and should stimulate discussion. Accordingly, small group discussions will be held after lunch to consider the pros and cons of the issues presented during the morning's lecture.

Now, let us talk about the monograph. As will be noted in its preface, it represents not only a compilation of information from about 50 or more books but also points up current trends. We think it unique. It should save you many hours of research. In fact, we have such confidence in this document that with the exception of a few short publications it has been made your principle essential reading for the course. Those eager beavers, however, may wish to read the 50 source documents from which it was derived.

Seriously, you must be familiar with its contents to fully understand the implications of the problems presented by our lecturers and to obtain the real benefits from the discussion periods.

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In addition to the regular faculty instructors of the Requirements Branch, we will be assisted by Captain Arthur H. Castelazo, USN, and Lt. Colonel William R. Norman, USAF, from the Manpower Branch; and from the Procurement Branch by Colonel Charles P. Crosby, USA, Lt. Colonel Albert M. Johnson, USA, and Mr. Claire F. Muncy.

Since I do not want to steal the thunder from our speakers and infringe on the rights of our discussion group leaders, we will dispense with a question period.