

QUANTITATIVE DISTRIBUTION CONTROL

30 November 1954

1019

CONTENTS

	<u>Page</u>
INTRODUCTION--Rear Admiral W. McL. Hague, USN, Commandant, Industrial College of the Armed Forces	1
SPEAKER--Vice Admiral Murrey L. Royar, SC, USN, Chief of Naval Material	2
GENERAL DISCUSSION	20

NOTICE: This is a copy of material presented to the resident students at the Industrial College of the Armed Forces. It is furnished for official use only in connection with studies now being performed by the user. It is not for general publication. It may not be released to other persons, quoted or extracted for publication or otherwise copied or distributed without specific permission from the author and the Commandant, ICAF, in each case.

Publication No. L55-61

INDUSTRIAL COLLEGE OF THE ARMED FORCES

Washington, D. C.

Vice Admiral Murrey L. Royar, SC, USN, Chief of Naval Material, was born in Los Angeles, California, 22 November 1894. He attended the Los Angeles High School and was graduated from the University of California with a B. S. degree. Appointed Ensign in the Navy on 29 June 1917, he progressed in rank until he was appointed to his present rank on 2 October 1954. During the period 1917-21 he had various assignments overseas. One of interest is that when stationed aboard ship at Vladivostok, he outfitted men for a newly organized Czech Navy. In 1922 he attended the Harvard School of Business Administration and was graduated in June 1924 with a M. B. A. degree. From 1924-42 he had various assignments ashore and afloat. Since then, some of his important duties were: 1942-44, officer in charge of the Accounting Group and Lend-Lease Program, Bureau of Supplies and Accounts (BUSANDA); 1944-46, general inspector of the Supply Corps on a worldwide basis; 1946-48, command of the Naval Supply Center, Norfolk; 1948-51, command of the Naval Supply Center, Oakland, California. In October 1951 Admiral Royar was sworn in as paymaster general of the Navy and chief of BUSANDA. He remained as chief of that Bureau until his current assignment. This is Admiral Royar's first lecture at the Industrial College.

QUANTITATIVE DISTRIBUTION CONTROL

30 November 1954

ADMIRAL HAGUE: What every operating military commander wants readily at hand is the most materiel, and is disgusted with the least. A local commander seldom worries too much about how the result of giving him the most is achieved. He applies the old theory that to be ready for what is ahead he certainly wants supplies. When worthwhile supplies are available, he is not interested in the pipeline, he is not interested in the warehousing, he is not interested particularly in the purchasing. But to the area commander, or to the people in headquarters, or to anyone who has responsibility for transportation and logistics, as well as for combat operations, the method by which the result is achieved is of tremendous importance.

If the mostest is arranged by virtue of overpurchases, of huge warehouses, of oversize pipelines, of gigantic supply, it means that it may very well be that the necessity of giving a local commander the mostest is at the expense of giving another commander the leastest to get out of there the fastest that he can.

So all military logisticians must apply, in a much more complicated, much more difficult field, the principles of the chain grocery stores, of the maximum goods on the shelves with the minimum in the warehouses and the minimum in transportation. How that is achieved, the quantitative controls used, is the subject of our lecture this morning. We are very fortunate in having with us Vice Admiral Murrey L. Royar, Chief of Naval Material, to give this lecture. We are extremely fortunate, because Admiral Royar speaks not only from the theory of the business but from the practical know-how.

One very important fact of Admiral Royar's career was slid over rather easily, it seems to me, in the printed brochure, the thumbnail sketch that you have had, and that is his duty as commander of the Naval Supply Depot at Oakland. The reason I say it was slid over is simply this. If you will recall, Korea broke about eight or nine months after we of the military services started on the cutbacks resulting from the recessions of 1949. We were all busily engaged not in expanding but in cutting back, reducing, sloughing off, and all of a sudden Korea hit, and all of a sudden we had to reverse our play. Where we

were cutting down, we had to expand; where we were canceling orders, we had to reinstate orders and put into effect still greater orders.

No where else were these problems quite so acute, so far as the Navy was concerned, as in the San Francisco Bay area. That was the one port through which the main supplies of materiel and everything else funneled out to the Far East. I was in the Navy Department at the time, and we anticipated many very serious and difficult problems in the San Francisco Bay area; and we had some. But truly, the Naval Supply Depot at Oakland gave us virtually no headaches at all. Somehow or other, that outfit seemed to be able to meet the problems, to make the local decisions, and to get the work done. About all I was able to determine was that it wanted Washington to do nothing but let it alone.

I remember the gratification with which I participated in an award to a group of civil-service employees of the Oakland Supply Depot, the first award given by the Navy under a law recently passed by Congress to reward incentive work. That was merely typical of the way the Oakland Supply Depot operated.

The commander of the Oakland Supply Depot was Rear Admiral Murrey L. Royar. What happened at Oakland, the way they met those problems again, was merely typical of the way Admiral Royar had been meeting problems through his long and quietly brilliant naval career. Admiral Royar could very well have said, but he would not, "Thirty years of knowing how taught me what I am doing now." Thus it was no surprise to those of us in the Navy that he was very shortly elevated to the position of chief of the Bureau of Supplies and Accounts; and it was no surprise to us recently, this year, when he was promoted to the rank of Vice Admiral and made Chief of Naval Material.

We have this morning a man who, by experience and by application, knows how the results are achieved of keeping supplies on hand where and when they are needed, with a minimum of backup.

Admiral Royar, it is a tremendous personal and official pleasure for me to welcome you to this platform.

ADMIRAL ROYAR: Thank you very much, Admiral Hague. Gentlemen, I am extremely happy to be with you today. Recently I have been looking over a list of your past and future speakers, and the caliber of these men, as you know, is extremely high. It is indeed an honor for you to place me in such fine company.

I have been told that a good speech is like a young lady's bathing suit--long enough to cover the subject and brief enough to be interesting. I shall keep these thoughts in mind while talking with you today.

The subject of our discussion this morning is "Quantitative Distribution Control." Although my remarks shall be confined to the application of this subject to the Navy, the same principles may well have application within the Army, the Air Force, and the Marine Corps.

Before discussing the "how" of quantitative distribution control, it is important that we discuss the "why." Is it really necessary that we maintain records and worldwide control of inventory and distribution? Is the effort we put into maintaining worldwide control worth the return we gain? Or perhaps I should ask the more basic question: Is detailed inventory and issue information required for a central inventory manager to do his job properly? In the Navy we have found the answer to all these questions is a very emphatic "yes."

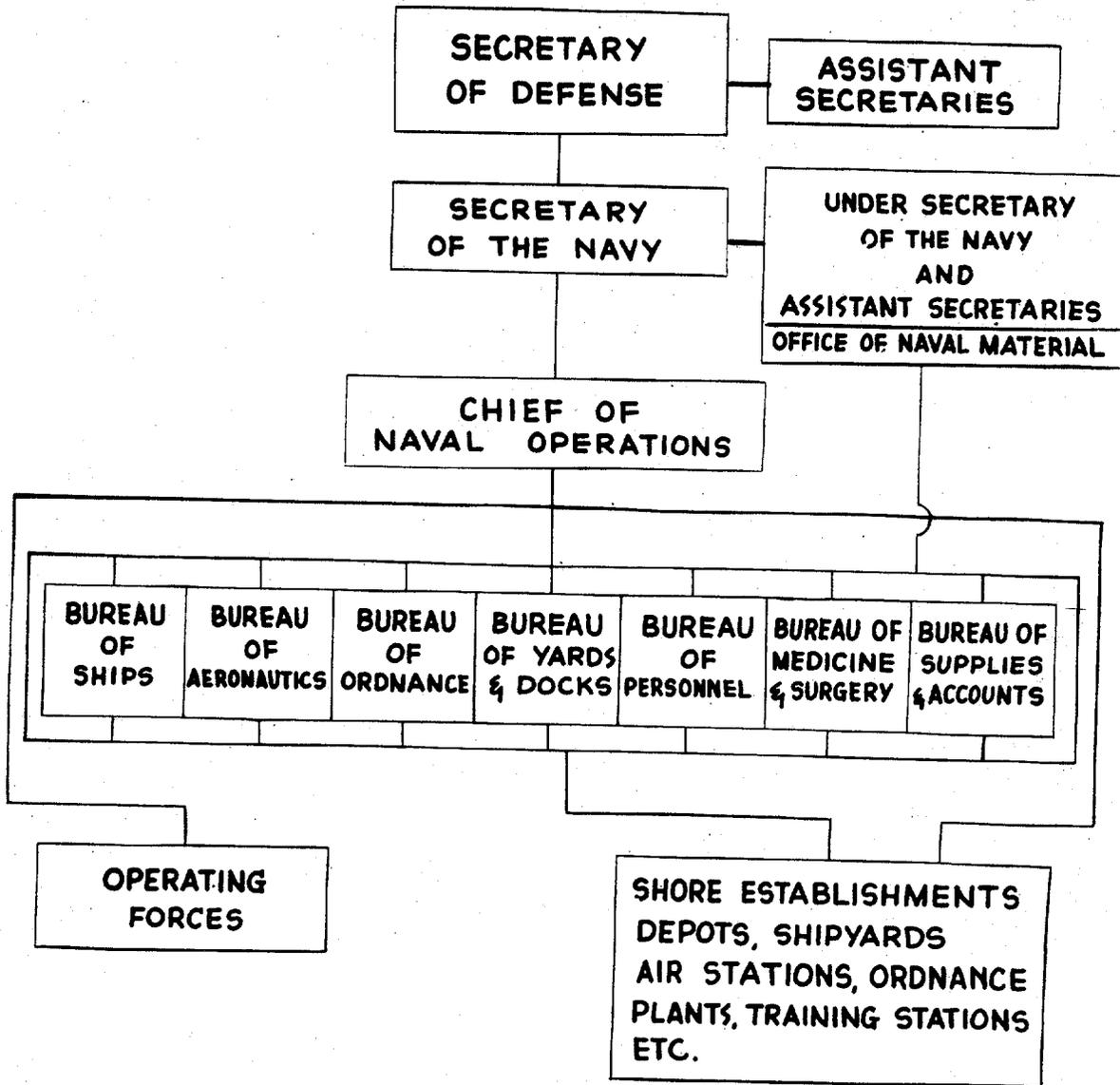
In the past few days you have been hearing a great deal about the importance of good requirements. I trust that you listened carefully. The relationship between good inventory control and good requirements is a very close one indeed. In the past our requirements computations simply have not been good enough. Much of our difficulty has resulted from not knowing what we had on hand. There have been some cases of not having enough, but most often it is a case of too much. We won the logistics battle in World War II not because we knew what we needed, but because we were able to order what we thought we needed and depend on our abundant natural resources and industrial might to satisfy our extravagant demands. I think in all the services we are in the same boat in this respect. Our next war will find us facing serious material shortages and bombed-out factories here at home. We cannot afford to be ordering more than we need, because we just won't be able to get it.

But how will we know what we need if we don't know what we have on hand? That's where we see the importance of worldwide quantitative control of inventory.

In a moment I want to talk some about my office. I have a chart here which will indicate where the Chief of Naval Material comes in the organization of the Navy Supply System.

CHART 1

NAVY SUPPLY ORGANIZATION



You will note it is directly below the Assistant Secretary of the Navy and is over the several bureaus.

One of the functions of my office is to establish inventory control and distribution policy. A brief discussion should prove helpful in understanding the Navy logistics organization, and more specifically our system of quantitative distribution control.

The Office of Naval Material was born of necessity in the midst of the material crises which characterized the early days of World War II. In January 1942 the Under Secretary of the Navy, James Forrestal, saw the necessity of having a coordinating office which could speak for the various bureaus in dealing with the War Production Board and the other Government agencies. Likewise, it was necessary for the bureaus to be operating under similar procurement and production policies. Frequently a referee was needed to determine such things as who would buy what, who had inspection cognizance, and, a very important point, how would we divide the limited productive capacity of industry so that each bureau could get the materiel that was needed to fight the war. These were very real problems, and the Office of Naval Material was established to help solve them. The original office was known as the Office of Procurement and Material.

On 5 March 1948 Public Law 432 of the 80th Congress made the setup legitimate. This law gives me the responsibility for determining the procurement and production policies and methods to be followed by the Naval Establishment, and for coordinating and directing the efforts of the bureaus and offices of the Navy Department in this respect.

My responsibilities in these areas are executed with the full force and authority of the Assistant Secretary of the Navy for Material, with whom I work very closely. In addition my job is to effectuate policies of procurement, contracting, production, and material control throughout the Naval Establishment. In carrying out this mission the Office of Naval Material has responsibilities in four major functional areas:

1. Procurement.
2. Production.
3. Field services, which include materiel inspection and contract administration.

4. Material control.

To summarize, the Office of Naval Material is the Navy link with our national economy. I want to make it very clear, however, that the Office of Naval Material is essentially a policy and not an operational activity. Operations is a Chief of Naval Operation and a bureau function, and that is the way we plan to keep it. It is of major importance that the bureaus maintain both the authority and the responsibility for performing material functions in the specific areas. We must not separate responsibility and authority. If we do, we are in serious trouble.

There is no conflict of interests between the Chief of Naval Operations and the Chief of Naval Material. The Chief of Naval Operations tells the materiel bureaus what he wants, where he wants it, and we in the Office of Naval Material, together with the bureaus, see that he gets it. To put it in other words, the Chief of Naval Operations field of materiel interest may be broadly called consumer logistics, whereas the Office of Naval Material interests are chiefly in the area of producer logistics.

Now let's turn to our topic of discussion for the morning, "Quantitative Distribution Control." At present in the Navy we have about 14 billion dollars in stock, and this is accounted for both dollarwise and itemwise. We have between 1.3 million and 1.4 million items. New items are being added at the rate of 150,000 a year--that is a net figure. We are adding more than that and also dropping a number of items each year. Compare this with the 200,000 items in the whole system at the start of World War II. These 150,000 items are added chiefly through new-type weapons and through conversions. In other cases local stock is coming under the cataloging program and being identified.

Most of you are aware that the Navy firmly believes in decentralized operations. The technical bureaus, such as the Bureaus of Ships, Aeronautics, Ordnance, and Yards and Docks, are the engineering experts in their respective fields, each specializing in a category or combination of categories of materiel. Each of these technical bureaus may be said to be concerned with "the nature of the beast," that is, the physical and operating characteristics of the materiel category assigned.

The technical functions are definitely peculiar to the category of materiel involved, but at the same time it is recognized that all of the materiel categories are subject to the same set of business management principles.

It follows, then, that a single bureau should be charged with the performance of all "business" functions for all Navy materiel. This bureau is the Bureau of Supplies and Accounts (BUSANDA). I believe the strength of the Navy Supply System may be directly attributed to the fact that we have a supply corps--a group of officers trained in business functions who spend their entire naval careers working in supply jobs. Establishment of some such corps in both the Army and the Air Force might be worthy of consideration.

Now, what are these "business" or "supply" functions as we call them in the Navy? They cover such items as procurement, inventory control, storage, issue, disposal, transportation, cataloging, stores, and appropriation accounting, to name a few. These functions are all performed by the Supply Corps. Specialized procurement, however, of a limited quantity of certain technical materiel and major end items is performed by the technical bureau concerned.

At this point I would like to make a few observations.

First, a basic thesis of the Navy Supply Plan is that the business functions are the same for all categories of materiel, whereas the performance of the technical functions is specialized by categories of materiel.

The second observation is, the diversification, specialized, and dollar investment in these materiel categories is so complex and vast that decentralization of control from the bureau level is obviously necessary on at least four counts:

1. To relieve the technical bureaus and the business bureau of the multitudinous, recurring, day-to-day transactions.
2. To permit concentration of the available technical and business talent in each specialized field of materiel.
3. To permit tailoring, within the framework of the basic principles, of the business functions to the peculiar requirements of a given

category of materiel wherever necessary to permit maximum responsiveness to the users of the materiel.

4. To eliminate concentration of the control function in one geographical area.

Chart 2, page 9. --Now this decentralization of control from the bureau level is accomplished by the assignment of responsibility for the control of various categories of materiel to business-technical offices which we call supply-demand control points. These are truly offices and do not carry any inventory.

I am sorry the printing is so small, but it indicates below there some of the several supply-demand control points, and indicates the technical control of the bureaus as well as the management control of BUSANDA.

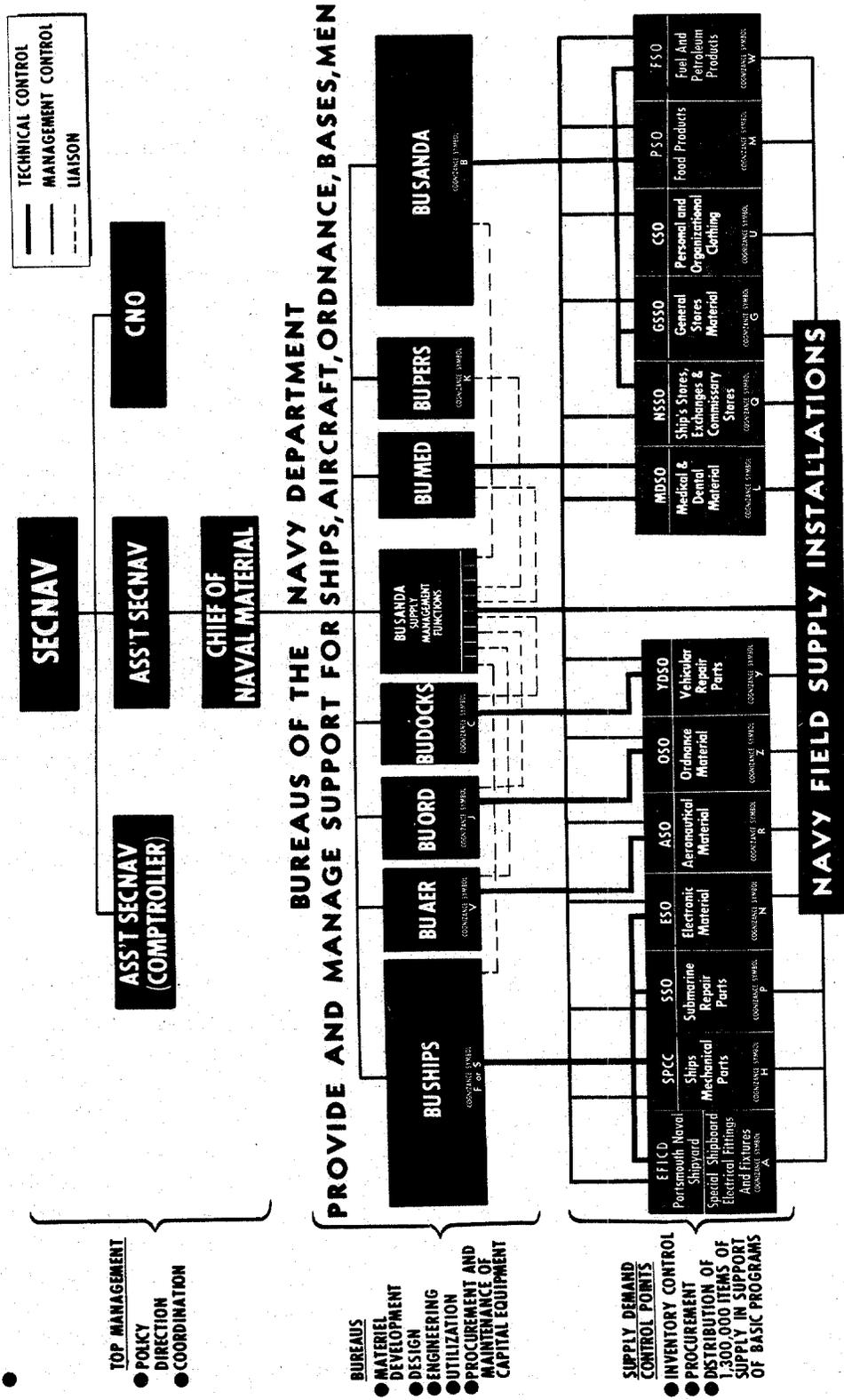
The Navy has found it absolutely essential to marry supply experience and technical knowledge in order to solve the technical item supply problem. At the control points, we combine the technical knowledge that tells us what to buy with the supply experience that leads us to know how much to buy, and where and when it is required.

Prior to the inception of the supply system, each bureau procured and controlled all of its technical materiel. As the supply system has proved itself effective, there has been a continuing program of refinement, so that today approximately 95 percent of the Navy's materiel is controlled by the supply-demand control points.

Now, let us see how these supply-demand control points work. Before you can control anything, you must have a common language, and that language must be definitive and in the hands of the potential consumer. The process we are talking about is cataloging--a business and technical function.

For example, in the provisioning process of, say, a fuel pump, the pump is broken down into subassemblies, parts, and materials, from which a determination of items to be supplied can be made. On the basis of manufacturer's drawings and descriptive data, items to be supplied are researched to determine uniqueness or to establish identity with an item already in the Navy Supply System. A standard Navy stock number is assigned to each item to be supplied on the manufacturer's bill of material for the pump.

CHART 2 ORGANIZATION OF THE NAVY SUPPLY SYSTEM



Some items of the bill of material will be found to be used only by, let us say, the submarine program, and so will be assigned to the control of the supply-demand control point which is responsible for the support of submarine operations. Other items, found to be in common use throughout the Navy, will be assigned to the General Stores Supply Office by use of a prefixed cognizance symbol.

The Navy has for many years given most serious attention to cataloging as an important tool of supply management. An integrated supply system of greater than peanut-stand size can't function efficiently without an identification and cataloging program--distilling and funneling all the different commercial names and numbers for one item into a single standard for military use. Since 1914, when Rear Admiral T. H. Hicks began the first Navy standard stock catalog, the Navy has emphasized cataloging and has published standard numbers.

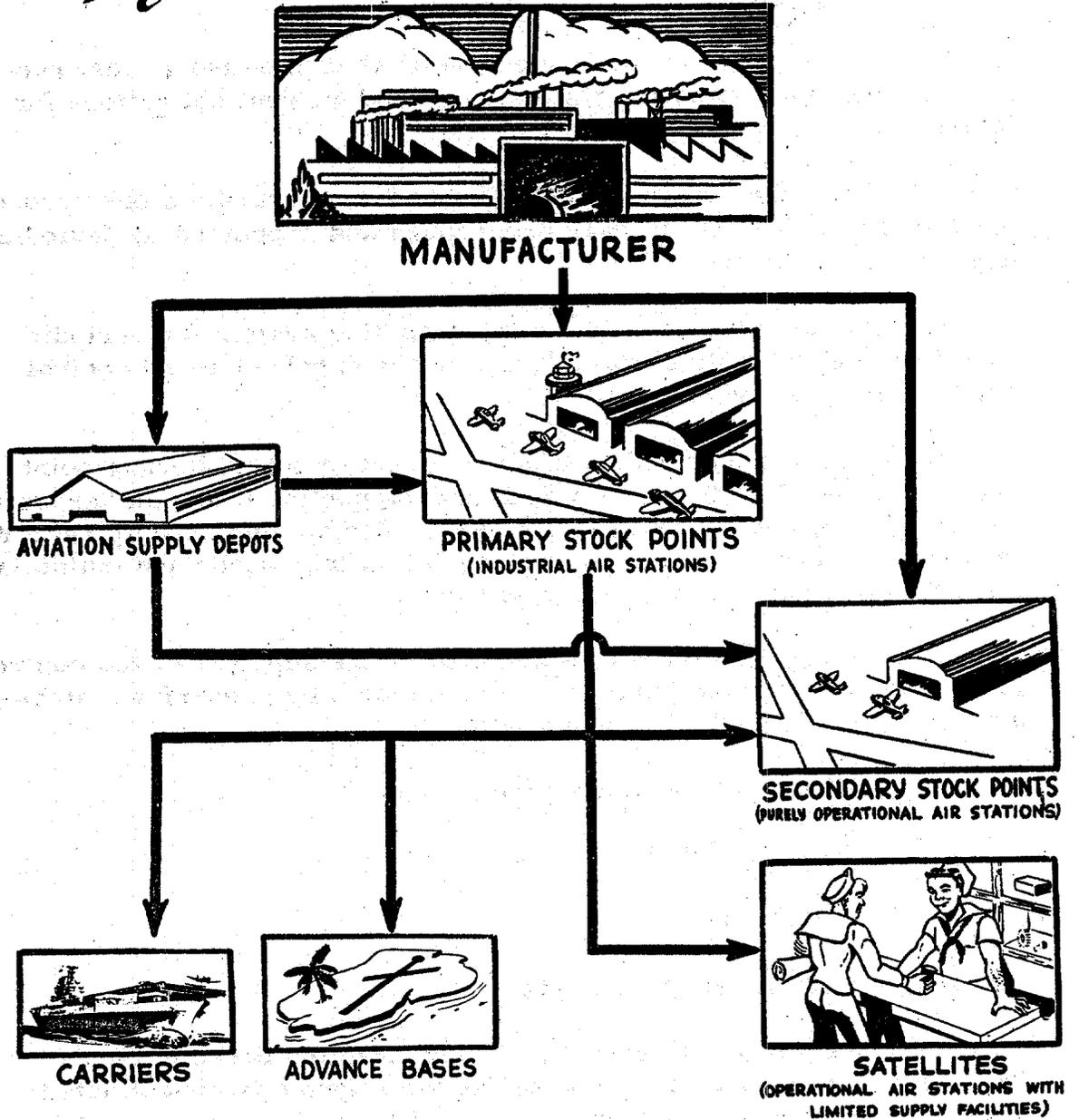
The resulting economies over the years are incalculable. The savings from cataloging stem primarily from determination of interchangeability and, as a consequence, less bin space, fewer storehouses, less investment in inventories, fewer personnel, and more expeditious handling of stores. The Navy and the taxpayer have won handsomely from the cataloging of Navy equipments, parts, and materiel. They will continue to gain by the Federal cataloging program.

Chart 3, page 11.--This chart shows the aviation part of the system, which is typical of the several categories of materiel which we have in the supply system.

A system with a common language and a management concept must have the third point of the triangle--warehouses with missions defined. In the Navy Supply System--primary stock points, which are reporting activities, carry stock for their own consumption, for designated secondary stock points, and may also support fleet units and yard and district craft. Replenishment is directed by the supply-demand control points on an automatic basis. To obtain replenishment other than automatically, or to obtain an item which they do not ordinarily carry, primary stock points have recourse to the next higher echelon of supply--the distribution point. These points, in addition to serving as interim sources of supply for the primary stock points, may perform overhauls, and conversions as well, and carry stock to satisfy their own local requirements. Activities with restricted business, carrying smaller stocks, are known as secondary stock points.

CHART 3

FLOW of MATERIAL in the AVIATION SUPPLY SYSTEM AS CONTROLLED BY The AVIATION SUPPLY OFFICE



These are nonreporting activities, and depend on a primary stock point for replenishment.

In order to attain the objective of inventory control, four factors are necessary:

1. To have the materiel properly identified (as we described under cataloging).
2. To have an accurate reflection of what is on hand, past recurring issues, expected receipts of stock, and current obligations for future materiel requirements.
3. Obtain the "stock status" picture from accurate stock records maintained by efficient posting procedures and supported by periodic physical inventories.
4. Have an accurate and timely reporting system for periodic submission of the "stock status" data to the supply-demand control point for review and analysis.

For each item carried, the supply depot or other storage point has a record card. Subsidiary to it and supporting it are an "expected receipts" card and an "obligation" card. The holding activity records the actual issues and receipts of material as they occur and maintains a running balance of the quantity on hand.

Every three months, or as directed by the supply-demand control point, the activity summarizes its stock status by preparing a stock-status reporting card. This card states:

1. Repetitive issues during the period.
2. Current obligations.
3. Quantity on hand.
4. Current expected receipts.

The supply-demand control point receives the banks of cards from each reporting activity where the intelligence is consolidated under a consolidated stock-status report which gives the story for each item of stock in the system.

Additional information is needed beyond this report in order to conduct a proper supply-demand review to determine whether or not these activities are truly deficient or truly in excess as the mathematical formula says they are. The stock analyst has an item-history card which gives the stock position of the item with regard to redistributions, omissions of procurement, and past errors in reporting.

I think that it is very important to contrast the difference between what we have today in such a stock-status report and what the Navy operated with prior to World War II. Here you see an entire system story. Under the previous setup, each activity determined its own local requirements and its own local stock levels. They had no knowledge of the situation at other stocking activities who held the same material. One might be buying to fill deficiencies while another was already overstocked. They went independently to the same manufacturers with their contracts; or one might even search hopelessly for a source of supply which was already well known to one of the others. In other words there was a scrambling for material by each of the stocking activities, and no orderly, centralized, overall control.

Many of the excesses of materiel on the shelf in the Navy today are the result of this type of operation which existed primarily before and during the early part of World War II.

But to get back to our stock analyst holding a consolidated stock-status report and an item-history card--a third card is in his hand--the item-data card. As its name implies, the card tells of the nature of this materiel--its unit cost, weight, and cube, as well as economical lots for purchase, storage, and issue. Is the item subject to rapid deterioration on the shelf? What has been its recent procurement lead time? On how many ships or aircraft is it installed, and in what quantities? Do ship tenders carry the item in stock? How long has it been carried? What special programs require the part? These and other questions must be answered by the stock analyst.

The analyst uses three things to make a supply-demand review:

1. The current and historical stock-status data.
2. The information on the item-data cards and item-history cards.
3. Stock analyst's own personal experience. (This comes under the heading of common sense.)

The accumulation of population and usage data is basic to any system which requires accurate and economical supply and logistics determinations. Population data are a first fundamental. They tell us which equipments and what quantities of material are actually installed in the vessels and crafts. More particularly, they speak in terms of items, with the item being identified to a recognizable and usable stock number.

Population data are pliable. Reduced to mechanized card or tape form, they can be manipulated to compute the precise quantity of each item that is installed on a particular vessel, or a chosen or selected group of vessels. They can be combined to tell us the total quantity of each item installed in an operating force. They can be separated to tell us how many of the item are installed in the reserve fleet as separated from the active fleet; in the Atlantic Fleet as contrasted with the Pacific Fleet. We see then that population data are the scientific determinate of the range of support.

Given the mission and the particular vessels assigned to the mission, population data will yield the total and precise range of items from which, with the aid of usage data, the true and exact support requirements of the mission can be computed. In effect, population data contribute to the economics of logistics, by establishing and limiting the range of support, while insuring the validity of the prescribed limits.

In order to scientifically manage inventory, it is not enough that you know what you have and where you are keeping it. You must know why you are keeping it. A little over a year ago, the Navy started a program to solve this problem. Some of you have heard of this under the somewhat complicated sounding names of stratification and fractionation.

The first part of this program consisted of dividing our materiel on hand into the requirements for peacetime. Among these divisions are:

1. Operating stock.
2. Mobilization reserve.
3. MDAP.

After this division is made, the quantities left over become known as the excess. The stock manager must further subdivide the excess into economic reserve and disposable excess.

Now, in purging the system of World War II excesses, we have two conflicting philosophies: One which demands a complete house cleaning, and a second which insists upon a very cautious approach. The former reasons that true economy of operation will only obtain when inactive materiel, with its high carrying charge, is eliminated from inventory. The latter, while recognizing this, still cautions against wholesale purging of materiel in the present unsettled climate of world affairs.

A war emergency necessity of having to repurchase, or worse, requiring and not being able to repurchase yesterday's surplus, demands a most judicious disposal program if such errors are to be circumvented. As a result, the concept of considering some of this relatively inactive, long supply, materiel as an economic reserve has evolved. Retention is justified on a cost basis, measuring total estimated inventory-maintenance costs against replacement costs. Some commercial inventory managers have stated the "cost to hold" as high as 25 percent per year. This is a point that I am afraid we in the military sometimes overlook.

The decision to retain or dispose of long-supply stocks boils down to calculations as to the cost of rebuying versus the cost of holding. Naturally, it would be grossly imprudent to dispose of long-supply materiel today which we would have to procure again tomorrow, a year from now, or, in some cases, even five years hence, during a war emergency.

Imagine the plight of an aviation stock manager who finds the planners have added three more overhauls and two years' operations to the plans for an XYZ plane; and in the meantime the manufacturer has retooled.

The program of reviewing inactive stocks was formalized in early 1953 and has proceeded to a point where we can see completion of the program at the end of this calendar year. Reports received in my office indicate that of the 18 managers originally concerned, nine have completed their reviews. The total dollar value of materiel earmarked for elimination from the supply system has exceeded a

billion dollars. Disposition of excess and surplus personal property, at original acquisition cost, amounted to 635 million dollars during the fiscal year 1954, as compared with 283 million dollars during the previous year.

The important part about all this program is that without centralized quantitative control, we would not know what we have systemwide, and therefore we just would not know what part of our stock is actually required.

One management problem, which has assumed a position of prime importance to us, is the extent to which the control of the Navy's inventory can be decentralized to the field level, or, in fact, decentralized completely. It has been widely accepted that the Navy's materiel holdings needed to be strongly controlled by a central authority with a rather extensive echeloning of stock through our distribution system. However, this concept has been tempered of late by the realization that in some cases materiel investment and carrying charges were inordinately high without improving effectiveness.

Therefore, considerable thought has been given to decontrolling stocks which are desirable but not essential to the consumer. Such materiel would not be carried in system stocks but would only be available through local purchase by the requiring unit. Further, control of certain other readily available commercial-type items possibly could be decentralized to field-stocking activities. Such control would entail stocking on a local basis as necessary to meet local requirements and thus would eliminate materiel pipeline requirements.

The Navy is carefully considering the ramifications of this decentralization and decontrol. Any system devised must consider the valuable usage data which would be lost. Most important, however, local peacetime suppliers may become woefully inadequate suppliers in time of war. The local automobile distributor can provide more than adequate support for our peacetime vehicles. I am not convinced he could do the same when the chips are down.

Now let us look at the area that we call fractionation. We have found that, at all supply-demand control points, a relatively small number of items are called for on a day-to-day basis. Roughly speaking, 10 percent of our items account for 90 percent of our issues. It becomes necessary then to divide our stock into such categories as

insurance items and fast- and slow-moving items. This process we call fractionation. Fractionation can be used to concentrate slow-moving items at a few backup points, thereby freeing warehouse space badly needed at coastal depots and shipyards.

Shipboard items--allowance lists--can be trimmed of materiel which has not moved. Mechanically, fractionation adds another alphabetical prefix to the catalog number. As in stratification, item-by-item analysis is absolutely necessary. As a result of stratification and fractionation reviews, more people know more about what is in the Navy inventory than ever before.

In discussing distribution, we must give some thought to the much discussed subject of cross-servicing. Personally, I believe this subject has received a great deal more attention than it warrants. It is sheer folly to force unnatural and unworkable cross-servicing ideas for a wide variety of materiel. To function efficiently in wartime, all of our services must have an effective supply system of their own.

Why do I say a single distribution system or extensive cross-servicing won't work? The most basic reason is that you are violating a fundamental concept by separating responsibility and authority. Another very real problem is how the supplying service would determine the requirements for the receiving service, to say nothing of the problems of distribution.

We could discuss this problem at length, because I know a lot of you have differing views. I want to leave just one thought in this area. Don't let us spend a lot of time setting up peacetime masterpieces that will become colossal wartime failures.

Finally, let us talk about economy. How do we save money without sacrificing efficiency and combat effectiveness? The inventory-management methods that we have been discussing this morning are all designed to produce maximum defense for the minimum dollar. Here are some additional methods that are producing very worthwhile results: The first is:

Mobile Supply Support

The Korean conflict helped us develop mobile supply support. We have learned to get along without the costly, heavily stocked, backup.

bases we had in World War II. By carrying carefully tailored loads, the supply ships are able to move with the fleet and provide maximum support with a minimum inventory investment. When you can operate effectively with less inventory, you are really saving money. Most of you have memories of the vast quantities of materiel placed on remote Pacific Island bases during World War II. By the time the bases were built, the war had passed them by. We must not repeat this performance. I believe mobile supply support should help reduce our required bases to a minimum.

The next is:

Storage

Storage in the Navy is coming to use the term "popularity" to indicate the technique of storing materiel by frequency of issue--by its fraction. This technique has always been in force, although not so christened, or crystallized into a planned program. In short, the storage manager is concerned with maximum utilization of space with a minimum handling of materiel.

Very important in producing distribution economies is intelligent use of:

Transportation

Economies in this area are achieved by close studies of the reasons for priority shipments as well as the selection of the best available modes of transportation. At the same time, the cost to transport and the time required to transport must always be borne in mind. Cross-hauling, the bugaboo of civilian industry as well as the military must be eliminated wherever possible. Inventory managers can lose their shirts on transportation because of the swift changes occurring in requirements.

We must also realize that the swiftness of transportation greatly reduces the necessity of stocking a duplication of parts at several places in the world. I am thinking particularly now of the so-called insurance items. Properly used, modern transportation can be one of our greatest tools in reducing our inventory investment.

Another area of enormous potential savings is:

Preservation and Packaging

Our objective here is optimum military packaging. The dire examples of material losses during World War II due to poor packing and packaging procedures have been recited many times. In the post-war years the military packaging pendulum showed signs of swinging to the other extreme. Military packaging costs were tremendous and represented a sizable percentage of the procurement dollar. The basic objective of the Navy tare-weight and cube-reduction program is to provide adequate rather than maximum protection. This program has been very successful during the past year and has resulted in savings measured in millions of dollars. We do not however intend to lose sight of the fact that materiel must reach the operating forces in usable condition. Our aim is adequate packing but not overpacking.

Let me now summarize what we have talked about today. First of all, good requirements are essential to efficient and economical military operations. But good requirements can't be predicted if we don't know what we have on hand. When we consider the value of the Navy inventory, which exceeds the amount of the current appropriation for the Navy, we see we are talking about significant matters.

The talent required to manage military inventory must be the best available, from calculations of replenishment and procurement through all stages of storage and issue. This factor is gaining recognition among the services. Industry has recognized the importance since the inventory depression following World War I. From the stock poster to a professional management corps, the military needs the best, on a full-time, permanent basis.

Military inventory management has much to learn, and a great deal of it is from private industry. The private businessman who doesn't have a good knowledge of his inventory doesn't stay in business long. The armed services have long suffered because of faulty inventory-control practices. We have come a long way, but we must do even better. Victory or defeat may well depend upon the effectiveness of the inventory manager's work. The task is not easy. The job is not one for amateurs or people on a one-time assignment. Whatever the refinements to inventory, let us not mistake mere activity for progress. We should never lose sight of our objective of service to the operating forces with a maximum of economy.

COLONEL HOLMES: Gentlemen, Admiral Royar is ready for your questions.

QUESTION: I wonder if you would explain how your office polices the Navy inventory system. That is my impression of what the Office of Naval Material does. I still don't understand just to what extent it is carried out.

ADMIRAL ROYAR: As I said, we work directly under the Assistant Secretary of the Navy for Material. The inventories themselves are worked through BUSANDA, the business bureau of the Navy. We do get all the inventory reports. We are able to scan them; we are able to question anything that looks out of line. We know pretty well what the status is. So far as policing goes, we don't try to police too much. What we try to do is keep an eye on the size of the inventories--the magnitude--and the general turnover, and question the bureau if these reports don't look good. In the case of the technical bureaus, if some materiel seem to be getting out of line, we question them. That is, in the main, the way we have been doing, and we have been very successful.

QUESTION: I have three questions. First, I would like to ask you what you meant by "insurance" items.

ADMIRAL ROYAR: Insurance items are, for example, the propeller of a ship, something that you have no regular turnover for; something that you may need once in a great while but not very often.

STUDENT: I imagine that answers my second question, which was going to be a question of what you meant by reducing the ship's allowance list by trimming items which have not moved--you include insurance items.

ADMIRAL ROYAR: We have found that we do have a lot of things in stock. I think you have probably heard about the number of anchors we have, for one thing. We have certain insurance items, like ships' propellers, and there are dozens of items that we at one time had scattered pretty much around the country, to be ready if a ship needed them and needed them in a hurry. There are many items for which there is no regular demand, but when they need such an item, they need it badly. We now have a few of those items concentrated in one or two points. We can even fly them when they are needed, instead

of having the inventory scattered all over the world, and the attendant problems of keeping the inventory up, preservation of materiel, and so on. That is where good transportation comes in pretty well.

STUDENT: That leads up to the next question. I didn't understand you. You mentioned that swift changes in requirements can cause inventory managers to lose their shirts on transportation.

ADMIRAL ROYAR: That's right. We have a pretty mobile force, as you know. If you build up a stock for the ship's base on a certain port and get the fleet to move or shift, you have your requirements pretty well gummed up. You have to watch that pretty carefully. The individual manager has to watch so that he doesn't get caught being overloaded in certain places and short in other places. He may be overloaded on the west coast, we will say, and short on the east coast. He has to keep pretty much in close touch with each of the military operations so as to know what the problems are; to see that the Fleet is where the activity is going to be. That's a pretty important item.

QUESTION: Admiral, you mentioned that you have both item control and financial control. How far down does your central reporting system go? Is the central reporting system synonymous with the financial or stock fund system? In other words does your stock fund go down, including all items to all your depots, including the secondary ports--or does it go to only the primary points?

ADMIRAL ROYAR: No, it goes right down through the secondaries, all through the depots. The only case where you might not have it is a port where materiel is charged out when it goes aboard ship. But the financial control and the item control go right straight down through until the item is charged out to the final using activity.

QUESTION: Admiral, would you give us your view on the advantages or disadvantages of, let us say, cross service or joint service or common service in a unified overseas command?

ADMIRAL ROYAR: You are getting me out on a limb on that one. Well, I think overseas, in a unified command, there are certain cases where you are going to have to have cross service. But what I am thinking about particularly is the beginning of the whole thing. For instance, if you are going to cross service, to start with, in order to cross service exactly, you have to know the other man's demands.

If I were going to furnish you with all your brooms and mops, I would have to know exactly how much you were going to use. You might tell me, but I would have no means of checking up. Come the end of the year, you may end up with a big excess or with a shortage.

In our own system--and I am sure Army and Air Force do the same thing--we don't always present our own requirements without having a means of looking at them to see if they get out of line. We check them thoroughly. We don't always believe what people tell us. In order to successfully cross service, you are going to have to do the same, in any service. You must know what the requirements are going to be, and have some means of determining them.

That I think is one of the biggest obstacles to cross service. I think sometimes our own Navy, Army, and Air Force are pretty big for central service--I mean to furnish themselves. I am sure if you look at General Motors or Ford, or any of those people who have big companies, you will see that there is very little, if any, cross-servicing among those companies. They are all set up with their own supply angle. You can get things so big sometimes that they just will topple over from the very bigness. That's the thing I am concerned with. I think that we have to decentralize as much as we can on that, and keep it in workable places where it does not get tied up. Also, in that case, the commanding officer has to have control of his own supplies. There is no question about that.

QUESTION: Admiral, you spoke of the fact that the Navy's line items had increased from 250,000 to 1.4 million in the past 10 years. I presume the other services have experienced something similar. Will you comment on where this might be leading, from the supply problem standpoint, and whether it is ever possible that the tail wags the dog out of fright?

ADMIRAL ROYAR: I think you have something there. It is getting to be a big problem. I think the thing we have to do more than anything else is to research these items to find out whether they are duplicating anything we have in the system. That's the first thing. The second thing is, we have to be cold blooded and cut out the things we don't need. For example, there are submitted to us something like 230,000 or 240,000 items a year which are supposed to go into the system, and we are dropping now around 90,000 to 100,000 which are items that are obsolete and no longer needed, or perhaps are duplicates

of items already in the system. I think we are going to take a pretty cold-blooded view on adding things to the supply system.

As to getting big, I don't know where we are going to stop. The more we are mechanized, and the more new weapons that come into the armed services, the more spare parts and different kinds of spare parts you have. It is pretty hard to say where you are going to stop. The only way we can hold it down is to get rid of the dead wood. I think that is something we are trying to do. They are always figuring that the old spark might be used somewhere, but it never is.

QUESTION: This Federal catalog program is causing quite a conversion problem among the departments. I was interested in knowing whether or not the Navy intends to use the Federal cataloging system, or whether it will continue with the Navy catalog system.

ADMIRAL ROYAR: No, we are going right along with it. We are converting a little differently than the Army or the Air Force is, because of the supply-demand points, you see. For instance, in the supplementary spare-parts control center we are converting by categories. In other words the next one to be converted will be the General Stores Supply Office. That will be converted early next year. We figure we will have around 80 to 90 percent of the items converted to the Federal numbers, and then we will convert everything in that category and proceed on until we get through. We have a schedule. We are scheduled, the same as the Army and the Air Force. We are scheduled to end up at the same time. It is going to be a tie ball game.

QUESTION: Admiral, my question has to do with the determination of the overall Navy requirements for carrying out the strategic plans, and submission of these requirements to the Department of Defense. Does your office play any part in this?

ADMIRAL ROYAR: No. We are the materiel side. The Chief of Naval Operations is the one who determines the strategic requirements. He determines those and gives them to the Department of Defense. He also tells us what the strategic requirements are, and it is up to us, with the bureaus, to produce the materiel to carry it out.

QUESTION: Admiral, you mentioned the importance of the Supply Corps of the Navy. Which office in the Navy manages the careers of the individuals in the Supply Corps? Do those people mainly specialize

or do they move from function to function in the operation through their careers?

ADMIRAL ROYAR: Well, theoretically, the Bureau of Personnel has all personnel in the Navy. It has been very generous with BUSANDA and has cooperated with that office to work out careers for the Supply Corps officers. As you may know, the Supply Corps has its own promotion system. It runs with the line, but it is in the supply business all the time. The young officer who comes in goes first to Athens, Georgia, where they have a Supply Corps school. The Regular officer or career officer gets about nine months to start with. From there he generally goes to sea with older supply officers as an assistant on one of the ships, where he gets basic knowledge. Then he generally goes to a destroyer or a small ship, on his own. Then, after about three or four years, he comes ashore and gets his first taste of supply at that time ashore in one of the supply activities. Then he goes to sea again, sometimes as an assistant on an aircraft carrier, sometimes in a smaller ship as the supply officer. By the time he gets to be a lieutenant commander or a commander, he has a pretty good idea of what he wants to do.

Then we try to let officers, as much as we can, follow the specialty that they like. Some like transportation; some like accounting-- a few of our people like that. But, at the same time, an officer is also reminded that he has to be an administrative officer; and of course some officers go into purchase also. It is not hidebound. During this time they get the specialty in the United States. They then have to go overseas for a tour of duty with one of the MAAG's or in some foreign base. But in the background, after they get to be lieutenant commanders or commanders, we try to move them into jobs along the specialty that they like. But the fact is, they are always in the supply office. They are never out of it, wherever they go.

COLONEL HOLMES: Admiral Royar, on behalf of the Commandant, the faculty, and the student body, thank you very much for a very interesting and excellent coverage of the subject.

ADMIRAL ROYAR: Thank you very much.

(2 Feb 1955--350)S/ekh