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NAVY PROCUREMENT PLANNING

by

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by  
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It was requested that I speak on the subject of Navy Procurement Planning, but in the Navy we have no routine that can be so designated, as these words are defined and used in the War Department. Therefore my aim will be to give a brief statement and a brief description of the Navy system of planning for the procurement of material in time of war: to tell you how and why we plan.

The Navy's operation centers in the employment of the Fleet. The proper conception of the Navy is one of ships as operating units, not one as organizations of men. Planning covers the use and maintenance of these units, the ships, against probable enemies.

The Navy standard method of War Planning is prescribed in publications prepared in the War Plans Division of the Office of Naval Operations.

The Navy's material requirements arise from four general sources:

- (1) The Fleet.
- (2) The Local Defense Forces.
- (3) The Advanced Bases.
- (4) The Shore Establishment.

The Navy system of planning for the support of the Fleet in time of war involves:

- (1) Estimating material requirements.
- (2) Allocation for production or procurement.
- (3) Distribution of the finished products.

We must determine:

- (1) WHAT we need.
- (2) HOW MUCH we need.
- (3) WHEN we need it.
- (4) WHERE we need it.
- (5) How to insure safe and prompt delivery beyond the continental limits of the United States.

The foregoing sounds very simple, but it is not. Frequently, we find ourselves involved when we begin the study of:

- (1) Breakdowns.
- (2) Similar commodities.
- (3) Possible substitutions.
- (4) Strategic raw materials.
- (5) Sources of supply within and without the United States.
- (6) Standard specifications.

- (7) Special needs of the different requiring agencies.
- (8) Problems of distribution to points outside the United States.

The magnitude of the task of computing Fleet requirements can be visualized only when the necessary augmentation of the Fleet to meet war needs is considered.

- (1) The vessels of the Coast Guard must be provided for, some for service with the Fleet in the Principal Theatre of Operations and some for service with the Local Defense Forces.
- (2) Navy vessels in a reserve-commissioned status, or de-commissioned status, must be placed in full commission; necessary repairs and alterations effected, equipment replaced, and storerooms fully stocked.
- (3) Merchant vessels, to be commissioned in the Navy for service with the Fleet as tenders, must be converted, equipped with machine shops and other necessary facilities, and completely stocked and armed.
- (4) Merchant ships, to be employed as cargo ships and troop transports, will require only a limited amount of conversion work prior to their first voyage, but must be armed at the first opportunity.
- (5) Material requirements must be estimated for the new construction program, including all types of vessels.

For the mobilization and operation of the Local Defense Forces, estimates must be made of the equipment and supplies necessary for the vessels to be employed and for the section bases to be created.

The estimates for requirements for an Advanced Base are made on the assumption that, in capacity, such base will have approximately the repair facilities of two of our present major navy yards, together with additional hospital, storage, and issue facilities sufficient to meet the needs of the forces to be served. A tremendous quantity of materials must be procured, assembled, transported to the Advanced Base, and the Base put into operation before any campaign can be commenced and pushed to a successful conclusion.

The estimates for the requirements of the Shore Establishment probably present our most complicated problems. One need only understand the general mission of the Shore Establishment, which is "to mobilize, sustain and augment the operating forces" -- to get some idea of the complexity of the task of accumulating the requirements for its accomplishment.

The recruiting service, the intelligence service, and the communication service must be extended and expanded. The facilities for construction, supervision, inspection, and cost-inspection must be greatly increased. Supply facilities for the purchase, receipt, storage, issue, and transportation of Navy stores must be provided, especially transportation at sea.

Before attempting to describe the actual mechanics of compiling the requirements of individual items of material, it may be well to consider the general classification of material, the basis of estimate, and the agency responsible for the estimates of each general class.

The Basic War Plan prescribes a standard condition of readiness. For Navy ships, this condition consists of:

- (1) Full allowance of all supplies, equipage, and ammunition.
- (2) Storeroom capacity of clothing, ship's store stock, and provisions, but not to exceed six months' requirements.
- (3) Full Bunkers.
- (4) Full lubricating oil tanks, and
- (5) Full fresh water tanks.

For merchant ships to be employed, the standards of readiness vary with the type of service to be performed. In the case of each type, however, the standard of readiness is specified.

The equipment and supplies necessary to comply with these standards of readiness constitute the navy's "Mobilization Supply".

The maintenance of this condition of readiness subsequent to mobilization involves periodic replenishment of equipment and supplies. This replenishment material constitutes the Navy's "Maintenance Supply".

General Navy Stores comprise operating material for the Fleet. This material is procured and issued under the direction of the Bureau of Supplies and Accounts. Logistic studies have been made from time to time to determine a year's use of each of thousands of items of material. For example, our records show the average yearly consumption of cotton waste by a battleship, by a light cruiser, and by a destroyer, and so on for the various types of ships.

These data, obtained by circularizing the Fleet, are kept up-to-date in loose-leaf record books in the War Plans Section of the Planning Division of the Bureau of Supplies and Accounts.

From these data, the Bureau of Supplies and Accounts computes the estimates of all items of general stores for the Forces Afloat by mobilization points and for periods as laid down in the basic plan.

Fabricated materials and materials for fabrication purposes in connection with new construction of Navy-type ships, for the conversion of merchant ships, and for the erection of dry docks, section bases, barracks, and storehouse facilities, are the primary concern of the technical bureaus. Estimates covering such materials are made by the respective technical bureaus on the basis of actual construction and conversion plans. Lt. Comdr. Wynkoop, of the Construction Corps of the Navy, will elaborate upon this phase of planning.

Machinery, tools, and equipment for installation in recommissioned ships, converted ships, and vessels to be constructed, unless appearing on type allowance lists, are estimated by the technical bureaus having cognizance of the material. Material, of this nature, when standard equipment for all ships of a particular class, is listed on type allowance lists, and are summarized by the Bureau of Supplies and Accounts. (The Navy's type-allowance lists are similar to the Army tables of organization equipment.) Items of spare parts for machinery and electrical and radio equipment require special consideration. Estimates for these materials are made either by the technical bureaus concerned, or by the Bureau of Supplies and Accounts in cooperation with the technical bureaus.

The industrial departments of navy yards are under the direct supervision of the Office of the Assistant Secretary of the Navy, Navy Yard

Division. Estimates of shop equipment and tools for new construction or for expansion of the Navy's industrial plants are prepared by the Navy Yard Division. A few activities have been exempted from the jurisdiction of the Assistant Secretary, such as the Naval Torpedo Station at Newport, R. I., the Naval Gun Factory, Washington, D. C., and the Naval Clothing Factory, Brooklyn, N. Y. Estimates of materials for the expansion and operation of these exempted activities are made by the bureaus responsible for their operation.

Ordnance, ordnance equipment, ammunition, and ammunition containers are estimated by the Bureau of Ordnance. Estimates are computed on the basis of actual armaments of the Navy type ships, approved proposed armaments of merchant vessels to be converted, and on assumed and approved rates of expenditure.

In the case of aviation ordnance equipment, estimates are made by the Bureau of Aeronautics and forwarded to the Bureau of Ordnance for consolidation with other ordnance items.

Estimates covering the requirements of Real Estate, Buildings, and Equipment are prepared by the Bureau of Yards and Docks. These estimates are based on actual planned needs for the construction and expansion of administrative and operating units. By far the bulk of the requirements of this category arise in Naval District and Advanced Base projects. Type-buildings and type-equipment are planned as units wherever possible, thus enabling bills of material to be computed readily. Particular emphasis is laid on the necessity for the utilization of existing facilities.

Because of my connection with the Bureau of Supplies and Accounts I will give a brief statement concerning Provisions and Clothing, vital essentials in war, and concerning Ship's Store articles because of their effect on morale.

Estimates of requirements of Provisions, Clothing, and Ship's Store Supplies are prepared in the Bureau of Supplies and Accounts on a man-day basis. However, each group and each item in each group require special treatment. Individual items must be considered from several different viewpoints. For example: provisions, and at least some of the items of ship's store stock, must be supplied for troops on transports as well as for all Naval personnel. Estimates of clothing requirements must be taken into account, the proportions of non-rated and rated men, chief petty officers, and officers. The preparation of the list of items to be carried as ship's store stock requires careful consideration. Bulky items must be eliminated as far as possible. Certain items are essential to the health and morale of the men. Toilet articles, stationery, tobaccos, and the like, must be carried. Flat pack letter paper, which can be packed closely, will be required in place of loose letter paper of the box-stationary type, which requires much more storage space. Candies will be carried for sale, but closely packed candy bars are sufficient to meet all actual needs and loosely-packed boxed candies are eliminated. Bulky dry cereals provide an excellent change from the Navy Standard cooked cereals, but when storage space is at a premium, these items must be omitted from the provision lists.

As an officer has stated, "The next war will not be a WAR DELUXE. In the next war absolute necessity must be given first consideration.

Some years ago it became apparent that in order to subsist the Fleet adequately when operating at a great distance from home waters and

under conditions where the sole source of supply is the provision ship, a "Normal Ration" should be planned. The Commander in Chief, U.S. Fleet, in February 1924, convened a board for the purpose of determining the amounts of the various items of provisions which would be required for 1,000 men for thirty days, when subsisting from a supply ship. Provision reports covering several quarters' isues of the various types of ships were assembled and studied and a table of ration components compiled. This table was called the "Normal Ration Table", and was promulgated to the Fleet in November, 1924. A "Normal Ration" is a balanced ration consisting of a specified amount of each of the ration components, e.g., a hundred normal rations consists of so many pounds of wheat flour, so many pounds of fresh beef, bacon, butter, eggs, fresh fruit, potatoes, etc., throughout the list.

Subsistence on this "Normal Ration" basis was made mandatory for all ships participating in the Hawaiian maneuvers and the Australian cruise of 1925.

This test of the normal ration was reported upon by all the force commanders. It was the unanimous opinion that, with minor changes in the proportions of some of the constituent parts, the normal ration would be satisfactory and that the normal ration plan was necessary for subsisting the Fleet in time of war. A board was appointed and the necessary changes effected, after which the table of components of the normal ration was approved for purposes of war plans.

Conservation of space is one of the important phases of our logistics problem.

In our computations of the mobilization supply for each class of ships, we must determine:

- (1) How many months' supply can be carried?
- (2) How many months' supply are already on board?

And in the case of fresh provisions,

- (3) What is the safe-keeping limit?

Our logistics' records give us the storage capacity in terms of the number of days each particular ship or class of ship can sustain itself without replenishment. This information is available for general stores, dry provisions, fresh provisions, clothing, and ships' stores supplies. Endurance days for fuel, lubricating oils, and gasoline are dependent, of course, upon the number of miles steamed, the speed, the flying schedules, and the use of ships' boats.

For planning purposes, some general assumption had to be made with respect to the amount of stores already on board at the time of mobilization. We have assumed that ships in commission would be one-half stocked on M-Day. That is, a ship whose normal capacity of general stores is six months' supply is assumed to have on board on M-Day a three months' supply; one whose capacity was three months' supply is assumed to have on board on M-Day a forty-five days' supply.

Our plans provide that, with each movement of a contingent of the Fleet to the Principal Theatre of Operations, there shall go forward a certain specified reserve of material for each unit of that concentration. Also, with each movement, subsequent to the first movement to the Principal Theatre of Operations, there shall go forward a replenishment of material for the forces already in the Principal Theatre of Operations. Where

Fleet movements are of such duration as to exceed the endurance of the smaller vessels, such as destroyers, submarines, tugs, and mine vessels, provision must be made for filling up en route. Tenders to small craft must be loaded with so much of the mobilization supply as is beyond the capacities of the respective small craft to carry.

#### DISTRICT PLANS.

Estimates under the different plans and parts of plans prepared in the Naval Districts, and outlying facilities which are under the direct supervision of the Bureaus and Offices of the Navy Department, are forwarded to the Navy Department and are included in the estimates of the Bureaus or Offices which prepare the principal parts of the Contributory Plan. Each District prepares a complete set of contributory plans. There is a part covering the activities of the Navy Yard Division in the District; that is, the industrial activities. There is another part covering activities under the cognizance of the Bureau of Construction and Repair, a part for Engineering activities, a part for Supply activities, and so on. The estimates arising under these plans cover material:

- (1) For the completion of the local organization.
- (2) For expansion and new construction projects.
- (3) For the maintenance and operation of the organization the first year of war.

These District estimates cover only material for local needs in operating and maintaining the local activities. They do not include materials for the Fleet, or for Advance Bases, for conversion or new construction of vessels or equipment.

When the plans for a Naval District are completed, they are delivered to the Bureaus and Offices of the Navy Department concerned where they are examined for sufficiency and moderation. After a study of the respective parts of the plan, they are accepted, or are returned to the District for revision with such comments and recommendations as appear necessary. When any particular part is finally accepted, the estimates of material submitted in connection with that part are included with the Bureau estimates and become a part of the material requirements for the support of that particular principal part of the Contributory Plan.

When all of the District Plans finally are completed and are received and accepted in the Bureaus which prepare the Principal parts of the Contributory Plan, the Bureau Plans are then completed and submitted to the Office of Naval Operations for compilation; the material estimates are forwarded to the Bureau of Supplies and Accounts, for consolidation and the summarizing of requested allocations.

Some time ago it became apparent that time would be saved if the Bureaus were permitted to complete their preliminary estimates without waiting for the receipt of District plans and estimates. As the material estimates arising in District plans would represent only ten or fifteen percent of all material requirements, delay was unwarranted. So the Bureaus proceed with Bureau estimates which are forwarded to the Bureau of Supplies and Accounts. When occasion arises, either as a result of major changes in the basic plan, or for other good and sufficient reasons, the

Bureau estimates will be revised. Briefly then, the estimates which arise in the Districts flow to the Bureaus and Offices of the Navy Department, where they are combined with the Bureau estimates and then forwarded to the Bureau of Supplies and Accounts for consolidation into total requirement estimates.

District estimates are prepared on forms to show:

- (1) A complete description of the material required.
- (2) The task and measure under which the requirement arises.
- (3) The total requirement.
- (4) The percent of the total to be required on M-Day.
- (5) The percent to be required each month after M-Day.
- (6) The place of delivery.

This information enables the action agency, the cognizant Bureau to determine intelligently whether the requirement is actual and whether the amounts specified are sufficient and reasonable.

The estimates of material, forwarded to the Bureau of Supplies and Accounts show:

- (1) The name of the article.
- (2) The Federal Standard Stock Catalogue number (if any)
- (3) The Specification number (if any) (if not, a complete specification must be attached).
- (4) The date of the preparation of the estimate.
- (5) The time ordinarily required to manufacture the particular item.
- (6) The weight per unit of the item packed for shipment.
- (7) The number of cubic feet per unit, packed for shipment.
- (8) The recommended allocation for procurement.
- (9) The quantities of strategic raw materials required for the manufacture of each unit.

The forms show the entry of requirements in units at each of twenty-nine (29) delivery points on M-Day, and on each of the eleven subsequent monthly periods of the first year.

Actual requirement dates are used. Therefore, in order to determine the Navy requirements in Industrial capacity by months, it is necessary to step up these requirements dates to take care of the "time to manufacture" and the "time to deliver".

A very large amount of industrial capacity will be required during the first twelve months for materials which will not be needed until after the first year of war. Separate estimates have been prepared to show these requirements. These estimate sheets are specially marked to distinguish them from estimate sheets covering actual requirements during the first year.

When these estimate sheets, together with recommended allocations are received in the Bureau of Supplies and Accounts the estimates will be consolidated on Summary Sheets. When the consolidation of requirements of an item is completed, and the recommended allocations are summarized, the Navy's total requirements for that item for the color war will be known. Then the Navy will be in a position to discuss allocations with you gentlemen of the Army and with members of the Army and Navy Munitions Board.

Estimates of requirements show what, when, and where our materials are needed. From this compiled information the procurement agencies of the Navy Department prepare their procurement plans. The responsibility for the procurement of the greater part of Navy stores and equipment rests with the

Bureau of Supplies and Accounts. The Bureau of Ordnance procures its ammunition and armaments. The Bureau of Yards and Docks performs certain procurement functions in connection with public works. The Bureau of Aeronautics performs procurement functions in connection with aviation.

These procurement functions are the legal responsibility of the Bureaus concerned, which will continue to perform these functions during an emergency unless the law is changed. No change in legal cognizance is anticipated at this time. Therefore, each bureau which now performs procurement functions, whether they be functions of actual purchase, of manufacture, or of letting contracts, must prepare a plan to cover its procurement functions.

I have requested Lt. Comdr. Wynkoop to speak to you upon the procurement problems of the Bureaus of Construction and Repair, Engineering, and Yards and Docks, with which he is more familiar than I.